

Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Stories of the Week
Clothes Make the Man
True Story
Probably Untrue Story
Era of the 'Common' Man
Life In the Old Boy Yet
Add Newspaper Boners
No Comment

Stories of the Week

Hilarity reigned at the wedding reception, and everyone was having a grand time except Joe. The latter's obvious insouciance distressed the bridegroom.

"I say, Joe, old chap, aren't you having fun?"

"No."

"Haven't you quaffed father-in-law's champagne?"

"No."

"Haven't you kissed the bride?"

"Not lately."

"Just imagine," whispered a romantic relative of the bride, "two weeks ago they were total strangers, and here they are in church, exchanging vows."

Rejoined the man sitting next to her:

"Best way of getting acquainted."

Clothes Make the Man

Six-foot-two and handsome was the haberdashery man who waited on Mrs. Violet Shy. Modestly she mentioned that her husband's birthday was next week, and maybe a nice set of nylon pajamas would be an acceptable gift.

"Indeed, ma'am," agreed the clerk, "and we have just the thing for your husband. He'll love these pajamas. Er, what size?"

"Really, I don't know, exactly," faltered Wife. "But he's quite a bit like you."

Ten days later Hubby, who was six inches shorter than the clerk and many degrees homelier, stormed into the store and asked for the manager.

"According to this ticket," he glared, "clerk 12-C sold my wife this pair of pajamas. They're at least four sizes too big."

"I happen to be 'clerk 12-C,' and I remember the sale quite well," soothed the proprietor. "She told me I reminded her of you, and so naturally, I . . ."

Hubby gave the handsome big fellow a long, appreciative whistle.

"Golly," he murmured, "that woman sure loves me."

(Concluded on Page 18, Col. 1)

Housewives Air Views on Home Cooling Contractors Sent Hiring Checklist

Cooling Bought, Not Sold — NAHB Group

By George M. Hanning

WASHINGTON, D. C.—More evidence—if any more is needed—that home air conditioning is bought, not sold, was offered at the Women's Conference on Housing staged at the National Housing Center here Oct. 14-15.

An unofficial count by the News at five of the eight discussion groups indicated that only six out of 46 delegates had ever been approached about buying air conditioning.

Of these 46 housewives, 18 had bought either a central sys-

tem or one or more window units.

The conference, which drew 79 articulate housewives from all parts of the country to tell home builders what they liked and disliked, wanted and did not want in their homes, was sponsored jointly by the National Association of Home Builders and the United Industry Committee for Housing.

UICH is composed of 10 associations of supplier manufacturers and contractors to the home building industry. Included are the Air-Conditioning & Refrigeration Institute, the Better Heating-Cooling Council, the National Association of Plumb-

(Concluded on Page 31, Col. 1)

Talk Climate Control At McCall's Congress

WASHINGTON, D. C.—Proof that women are becoming more knowledgeable concerning the hidden values of the home was given at the sessions of the McCall's sponsored second annual Congress on Better Living here.

One indication is that delegates who came from every state in the Union including Alaska were talking in terms of climate control as a whole rather than of the separate components of heating and air conditioning.

(Concluded on Page 31, Col. 2)

Can Adjust Capacity of New Tower

BALTIMORE — A cooling tower whose capacity can be adjusted over a wide range by changing spray pressure was announced recently by Baltimore Aircoil Co., Inc. here.

The company calls this a new concept in cooling towers resulting from intensive research over many years. It calls the new tower "Flexi-Tower."

Flexi-Towers, which cover a capacity range from 10 to 215 tons, were introduced to all BAC representatives throughout the United States at a home office meeting on Oct. 23-24.

Only mechanical requirement for increasing capacity is an

(Concluded on Page 11, Col. 1)

Carrier Introduces Hermetic Unit of 1,500-Ton Capacity

SYRACUSE, N. Y.—A new, larger size hermetic centrifugal refrigeration machine, boosting capacity of the line manufactured by Carrier Corp. to a nominal 1,500 tons—"highest available for single compressor units"—is announced by Hermann C. Hoffmann, general manager for the Machinery & Systems Div.

Addition of a sixth compressor size, raises to 52 the number of combinations of components for producing cooling capacities between 90 and 1,500 tons. The entire range is accomplished with standard parts, Hoffmann said.

A major advantage of the new water chiller is said to be the low installation cost per ton of refrigeration capacity. "This," the Carrier official explained, "is because of the minimum electrical service required, single compressor-motor and starter, and good performance

(Concluded on Page 31, Col. 4)

Indict 10 for Price Fixing Conspiracy

WASHINGTON, D. C.—A distributor and nine retailers in Toledo were criminally indicted recently by the U. S. Department of Justice for allegedly conspiring to fix prices on General Electric appliances.

Most of the defendants were also named in a companion civil antitrust suit that would enjoin them from continuing the alleged practice or reviving it in the future.

Both suits were filed in the

(Concluded on Page 31, Col. 4)

PROPOSED MERGER of the American Society of Refrigerating Engineers and the American Society of Heating & Air-Conditioning Engineers has been the subject of discussion at some of the meetings of local groups of both societies this fall. Air Conditioning & Refrigeration News, on pages 27 through 30 of this issue, presents reports on the meetings at which News staff members were present.

Pritchard, Dover Merge; Name New Officers

KANSAS CITY, Mo.—Dover Mfg. Co. has been merged with J. F. Pritchard & Co. of California, J. F. Pritchard, head of the parent firm, J. F. Pritchard & Co., announced recently.

Both firms manufacture cooling towers.

J. F. Pritchard, Jr., formerly president of Dover, heads the consolidated company. K. E. Johnson, formerly vice president and general manager of Pritchard of California, becomes executive vice president. P. S. Lyon is secretary-treasurer.

Occupants of other top positions are: W. R. Roeyer, general sales manager; H. R. Cohen, controller; P. A. Frohwerk, manager for research and engineering; and N. W. Kelly, manager for manufacturing.

Headquarters of the consolidated firm are at 4625 Roanoke Parkway here. The Dover plant in suburban Independence, Mo., will continue to operate with 100 employees.

Points To Consider In Labor Bargaining

WASHINGTON, D. C.—A checklist of important points to consider in collective bargaining agreements where hiring clauses and procedures are included was sent to members of the National Association of Plumbing Contractors on Oct. 24.

According to John M. Rhoades, president, a similar checklist was released simultaneously by the United Association of Plumbers and Pipefitters (AFL-CIO) and other interested groups—presumably including the Refrigeration & Air Conditioning Contractors Association.

The checklist was drawn up by a special lawyers' subcommittee of the Joint Industry Program Committee, composed of the legal counsels of eight

(Concluded on Page 4, Col. 1)

July Compressor Shipments Off Less Than 3% from '57

WASHINGTON, D. C.—Manufacturers' shipments of compressor bodies in July were less than 3% behind those in July a year ago, it was reported by the Air-Conditioning & Refrigeration Institute.

This marks the nearest approach that monthly shipment figures for 1953 have made to corresponding 1957 figures, ARI said, noting that for the first four months of this year monthly shipments averaged around 25% under those of last year.

A reversal of the trend began in May, during which month shipments were about 14%

(Concluded on Page 4, Col. 5)

Clyde Weatherwax, Acme Industries Board Chairman, Dies

JACKSON, Mich.—Clyde E. Weatherwax, 76, chairman of the board and one of the founders of Acme Industries, Inc., died here Oct. 13.

Weatherwax, with his two brothers, founded Acme Industries in Jackson in 1919 as a pipe coil manufacturer. During his lifetime the company grew into a major supplier of air conditioning and refrigeration equipment and systems.

Weatherwax remained active in company affairs until his death. He is survived by his son, Kenneth A., president of Acme, and his grandson, Peter A., executive vice president.

Make Your **FIRST CHOICE**

READING COPPER TUBING

Made by
Copper Tube SPECIALISTS

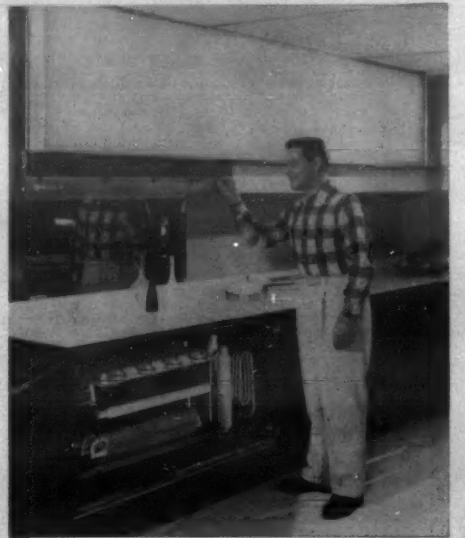


SECOND to NONE
for Refrigeration &
Air Conditioning Equipment

READING TUBE CORPORATION
EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

Glimpse Of The Future

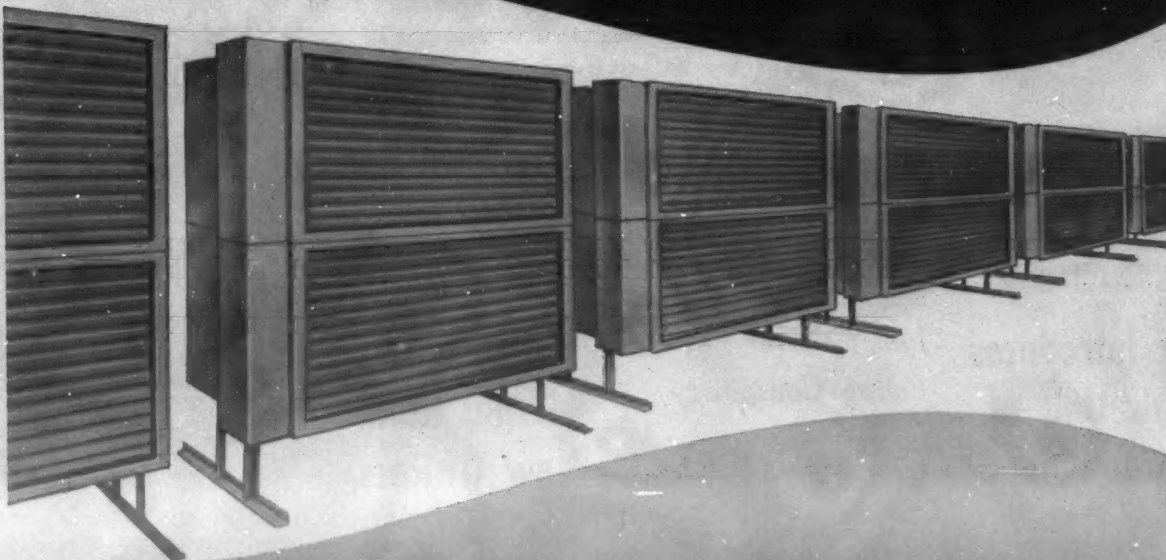
TOUCH of a button controls heating, air conditioning, refrigeration, and energy output in the RCA Whirlpool Miracle Gas Kitchen. The source of all these functions is the Miracle Gas Center in the kitchen base cabinet. Gas-fueled, the Gas Center provides cooling for all the refrigerators and freezers in the kitchen; heats, cools, and purifies the air in the entire house. The Miracle Gas Center is just one of almost innumerable devices incorporated in the Miracle Gas Kitchen to demonstrate the versatility of gas and the progress of gas appliance research. Shown for the first time at the American Gas Association Convention in Atlantic City, N. J., Whirlpool's \$250,000 showcase for tomorrow's appliances will eventually be seen by millions of Americans as it makes demonstration tours across the nation.



KRAMER

UNICON

for
**UNLIMITED
TONNAGE**



Kramer Unicon has brought a new era into the industry. With more than 20 years of unique practical experience and know-how in dry condensing, Kramer again offers new avenues of opportunity to the air conditioning and refrigeration industry.

Unicon now has no capacity limit. Standard Unicon systems up to 540 tons are now cataloged for the first time.

Unicons for heat pump applications are now also available with no horsepower limitations.

Kramer engineering and design has proven that the Unicon can move large volumes of air with extreme quietness.

Unicon has long proven by actual experience that it is free from fouling or corrosion and requires practically no maintenance.

The total operating weight per ton for Unicon is very low, resulting in minimum platform and reinforcement requirements.

Unicon space requirements are surprisingly small; a 300 ton system requires only 15' x 14' floor space and is 12' high.

WRITE FOR BULLETIN U-391

KRAMER TRENTON CO. • Trenton 5, N.J.

44 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Top Court Refuses To Hear Frigidaire Excise Tax Appeal

WASHINGTON, D. C. — The U. S. Supreme Court has refused to review a Court of Claims ruling that manufacturers must pay excise taxes on the full sales price of their products, including warranty charges.

Thus ended an appeal by Frigidaire Div. of General Motors Corp. for \$2.5 million refund on 1945 to 1951 excise taxes paid on Frigidaire refrigerator warranty charges.

Frigidaire claimed that its \$5 warranty charge should not be subject to excise tax. This results in the collection of an excise tax not only on the sales price of an article but also on fees charged for repair service, company attorneys argued.

The Court of Claims ruling that the Supreme Court, in effect, upheld says that manufacturers may not claim tax refunds for either the fees they charge customers for providing warranties or for the expenses they incur in correcting defects under these warranties when the warranties are ordinary and customary and are generally offered by competitors.

Of Frigidaire's warranty charge, the U. S. Justice Department advised the Supreme Court:

"What is involved here is nothing more than the customary warranty that a product will remain free from defects in material and workmanship for a designated period.

"A compulsory charge for such a warranty is as much a part of the sale price as if it were included in the sale price without specific itemization."

Hoover Appeals Ruling In Mitchell Patent Suit

NORTH CANTON, Ohio—An appeal has been filed by The Hoover Co. to the 7th Circuit Court of Appeals from a ruling clearing Mitchell Mfg. Co. of infringing an air conditioner patent held by Hoover, according to R. R. Fitzsimmons of the latter firm's patent department.



Introduces...

A New Concept
in Cooling Towers

ADJUSTABLE CAPACITY

Flexi-Tower

- MORE CAPACITY
- INFINITE SELECTIONS
- LOW COST
- BUILT TO B.A.C. QUALITY STANDARDS

Write for Literature

BALTIMORE AIRCOIL COMPANY, INC.

P. O. BOX 7322 • BALTIMORE 27, MARYLAND

Hiring Practices--

(Concluded from Page 1, Col. 5)

contractor associations and the United Association.

Its purpose is to provide useful material for contract revisions required by recent National Labor Relations Board decisions affecting hiring operations within the industry. Deadline for such revisions was set at Nov. 1 by NLRB.

The JIPC made no recommendation whether there should be exclusive, non-exclusive, or unilateral hiring plans. This decision, it said, should be left to local collective bargaining.

The checklist covered 11 points to consider on exclusive referral plans and two points to consider on non-exclusive plans. It made no suggestions on unilateral hiring.

Along with the checklist, NAPC also forwarded to its

members a series of plans for hiring which have been proposed by UA. NAPC emphasized that it did not endorse these plans but submitted them to its members for information. All UA locals will have these plans in hand as suggested provisions for new labor contracts, NAPC pointed out.

NAPC said that the effort of labor and contractor lawyers to prepare a joint document in this manner apparently is unique within the building industry. Other construction trades and contractor organizations were reported proceeding unilaterally with forms of hiring agreements.

NAPC said that NLRB General Counsel Jerome D. Fenton has made it clear that his office has not rendered any opinion or ruling as to the lawfulness or unlawfulness of any particular forms of exclusive hiring agreements.

McQuay Refrigeration Div. Introduces New Lines at 3-Day Sales Conference

MINNEAPOLIS—Representatives from all parts of the country attended a three-day sales conference of the refrigeration division of McQuay, Inc., manufacturer of refrigeration, air conditioning, and heating equipment, at its Grenada, Miss. plant, according to G. G. Workinger, sales vice president.

New models and new additions to the line were shown. Held Oct. 16-18, the Grenada meetings were conducted by Dean C. Seitz, sales manager of the refrigeration division.

Making the trip to Grenada from Minneapolis, in addition to Workinger and Seitz, were B. E. James, president; H. B. Williams, vice president in charge of engineering; T. D. Merchant and William P. Peter-

son, advertising and sales promotion manager.

"This is the first time the company has conducted a sales conference at the Grenada plant," Seitz said, "but with the bulk of our refrigeration equipment being produced at Grenada, our sales staff had an opportunity to become more familiar with our manufacturing procedure." The company also operates a plant at Fari-bault, Minn.

"Sales for all divisions of the company have shown a tremendous increase in 1958," Workinger said. "Our refrigeration division is growing rapidly because McQuay can now offer a complete refrigeration line with capacities and models to fit all needs."

Compressors--

(Concluded from Page 1, Col. 5)

under May, 1957; and continued in June, a little over 3% under June a year ago. Shipments during the first six months of 1958 as reported in September, were about 21% under the first half of 1957.

July's shipments brought the seven-month total shipments figure up to 2,421,308, about 19% under the 2,999,491 shipped in the first seven months of 1957. July shipments totaled 281,423 units, about 2.6% under the shipments for July, 1957, of 288,911.

Figures for the various categories, and names of reporting companies, follow:

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES

(Except for household refrigerators) Shipments Including Exports

*Horse-power	July, 1958	Jan.-July, 1958	Jan.-July, 1957
1/2 & under ..	118,349	700,443	293,138
3/4	17,060	129,880	465,250
1	9,076	49,159	150,443
1 1/2	36,467	530,565	67,443
2	10,782	184,751	335,929
3	13,213	215,337	760,833
4	9,076	74,330	195,144
5	7,952	48,634	179,051
6	3,118	23,070	75,028
7 1/2	1,008	6,871	55,724
10	397	3,033	33,508
15	206	1,188	7,863
20	185	1,181	2,351
25	150	1,009	1,479
30	161	1,155	1,233
40	113	799	
50	87	597	14,551
60	58	427	
75	46	275	
100 & over ..			
Total	246,625	2,113,378	2,646,990
For Auto a-c ..			
Total ..	34,655	301,889	349,590
For ammonia ..			
Total ..	143	1,041	913
Grand Total	281,423	2,421,308	2,999,491

*For all refrigerants except ammonia (excluding units for automotive air conditioning).

†Combined in order to avoid disclosing the figures of individual companies.

‡Breakdown of 30 hp. & over not available for 1957.

Reporting companies: Airtemp Div., Chrysler Corp.; Bendix-Westinghouse Automotive Airbrake Co.; Brunner Div., The Dunham-Bush, Inc.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co.; Refrigeration Div.; Frick Co., Inc.; Frigidaire Div., General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co., The; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div., Borg-Warner Corp.

This summary includes all compressor bodies shipped by reporting companies regardless of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are not included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

Smith Heads Midwest RSES

ST. LOUIS — Clarence Smith was elected president of the Midwest Association, Refrigeration Service Engineers Society, at the group's 10th annual educational conference held here recently.

Other new officers are G. L. "Bud" Easley, vice president; Cecil R. Visger, secretary; Lincoln Ebenhoeh, treasurer; and George Rumbaugh, sergeant-at-arms.

PLANNED FOR PRECISION

Jim: This year why not talk to H & H about our tubing problems. J. B.*

*Although it may be some time before you actually begin production, you're sure to get your next air conditioning season off to a good start by talking to the man from H & H now. Every year about this time our design engineers and metallurgists help more and more manufacturers develop better, more economical parts designs. Why not give us an opportunity to do the same for you.

H & H

TUBE & MFG. CO.
247 North Forman Ave. Detroit 17
OFFICES COAST TO COAST





BUT HOW DOES HE GO IN THE AFTERNOON?

A champion is never crowned champion—be it race horse or compressor—on the strength of a sole performance. It has to outperform something else in competition.

You *may* now be buying the best compressors and condensing units in the world . . . and your reject rate *may* be as low as you can reasonably expect. But you are going on pure assumption unless you have pitted them against other makes.

That is what most of our customers have done—with startling and happy results in many cases: reject rates down as much as 75 percent since giving us part of their business.

It's our firm belief that new standards of quality control at Bendix-Westinghouse are turning out the best performing compressors on the market today . . . but we can't prove it to you or begin to save you money until you *order* us to. How about that order?

Bendix-Westinghouse

EVANSVILLE, INDIANA

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio
Export Sales: Bendix International, 205 E. 42nd St., New York 17, N. Y.

WHAT... WHEN... WHERE

— A Guide to Coming Events of Interest

- National Electrical Manufacturers Association Meeting**
Nov. 10-14, Traymore hotel, Atlantic City, N. J.
- National Association of Practical Refrigerating Engineers Meeting**
Nov. 11-13, Kenilworth hotel, Miami Beach, Fla.
- Better Heating-Cooling Council Meeting**
Nov. 17-19, New York City.
- National Commercial Refrigerator Sales Association Convention**
Nov. 17-19, Golden Gate hotel, Miami Beach, Fla.
- Refrigeration Service Engineers Annual Convention**
Nov. 21-24, Neil House, Columbus, Ohio.
- American Society of Refrigerating Engineers Meeting**
Dec. 1-3, Roosevelt hotel, New Orleans.
- National Warm Air Heating & Air Conditioning Association Convention**
Dec. 4-5, Statler Hilton, Cleveland.
- Dairy Industries Exposition**
Dec. 8-13, Navy Pier, Chicago.

FTC Issues 9-Point Guide on 'Fictitious Pricing' Practices

WASHINGTON, D. C. — Battle lines have been drawn by the Federal Trade Commission in its war on trickery in price advertising.

In issuing to its staff a nine-point guide on where the law halts fictitious pricing, the commission served notice on all advertisers and sellers that intensified enforcement has been ordered.

"The guide also signals a campaign by the commission and civic organizations, such as Better Business Bureaus and the Advertising Federation of America, to acquaint the public with price tricks that have enabled unscrupulous merchants to pass off regularly priced merchandise as bargains," the announcement said.

FTC Chairman John W. Gwynne described the nine-point guide as "a long-needed spotlight on an advertising evil that has misled the public in its purchases and worked a competitive hardship on merchants who advertise honestly."

On receipt of the guides, Harry A. Babcock, FTC's executive director, emphasized that the commission's staff would heed them to the fullest of its capacity.

"We hope that the guides not only will serve to educate advertisers on what the law requires but also will encourage the widest cooperation on a voluntary basis. Nevertheless, we are prepared to augment our hopes by taking fast action against those who think these

guides don't mean what they say," Babcock said.

The guides are directed against "nine major types of fictitious pricing," the FTC announcement said.

Text of 9-Point Guide

"1. Savings Claims. Sellers must not represent or imply that they are offering a reduced price unless that price applies to a specific article—not just similar or comparable merchandise. Furthermore, any savings claims must be based on a reduction from the 'usual and customary' retail price of the article in the trade area where the statement is made or from the advertiser's regular price.

"2. Merchandise must not be advertised as reduced in price if the former higher price is based on an artificial mark-up or on previous infrequent and isolated sales. The former price quoted also must be the one that immediately preceded the new bargain price; if it is not, this fact must be clearly disclosed.

"3. Comparative prices for comparable merchandise may be used only if the claim makes clear that the advertiser is talking only about comparable merchandise and not the former or regular price of the article he is selling. Also, the comparable merchandise must be obtainable at the comparative price in the same trade area (or, if not, the ad must clearly say so).

"4. Special sales prices must not be advertised unless they represent a bona fide price reduction from the seller's customary retail price or at a saving from the regular price in that trade area.

"5. 'Two-for-One Sales' claims may not be made unless the sales price for the two articles is the seller's usual retail price for the single article in the recent regular course of his business or is the usual price in the trade area.

"6. So-called '1/2 price' or '50% off' or '1/4' sales must be factually true, and, if conditioned upon the purchase of additional merchandise, this fact must be conspicuously disclosed. Moreover, the proffered price reduction must be from the advertiser's customary and recent price.

"7. Products must not be advertised as being sold to the consuming public at 'factory' or 'wholesale' prices unless they are actually being offered at the same price that retailers regularly pay and are less than customary retail prices for the article in the trade area where the bargain price is claimed.

"8. No article should be 'pre-ticketed' with any price figure that exceeds the price at which the article is usually sold in the trade area where the product is offered for sale. Those who furnish the fictitiously high price tags are equally culpable with the merchants who use them. The same prohibition applies to material such as display placards on which is printed a fictitiously high price for the product offered for sale.

"9. Comparative prices must not be used in the sale of articles described as 'imperfect,' 'irregular,' or 'seconds' unless the higher comparative price is conspicuously disclosed to be for the same article in new and perfect condition. Also, the comparative price should not be used unless it is the same at which the advertiser usually sells the product without defects or is the regular price in the trade area for the merchandise when perfect."

GENERAL INSTRUCTIONS

The nine-point guide includes some general instructions by the commission to its staff on how to evaluate the import of advertising as well as the actual words used. The principles outlined are these:

That advertisements must be considered in their entirety and as they would be read by those to whom they appeal;

That advertisements as a whole may be completely misleading although every sentence separately might be literally true. This may be because things are omitted that should be said, or because the ads are printed in such a way as to mislead;

That advertisements are not intended to be carefully dissected with a dictionary at hand, but rather to produce an impression upon prospective purchasers;

That whether or not the advertiser knows the representations are false, the deception of purchasers and the diversion of trade from competitors is the same;

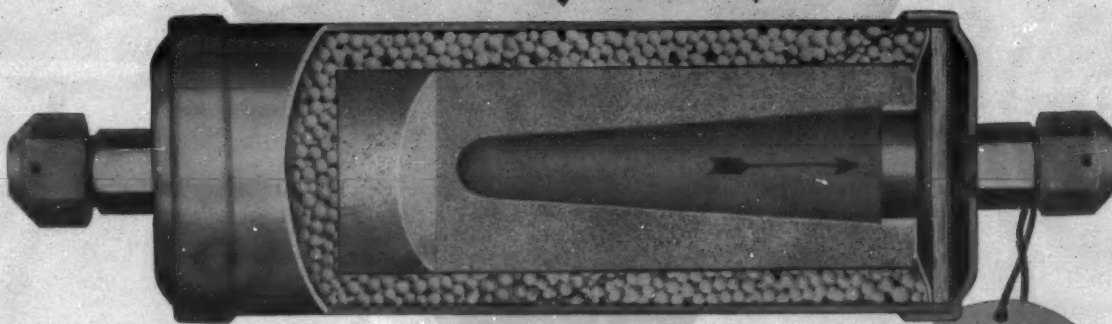
That a deliberate effort to deceive is not necessary to support a charge of using unfair methods of competition or unfair and deceptive acts within the meaning of the law;

That laws are made to protect the trusting as well as the suspicious; and, finally,

That pricing claims, however made, which are ambiguous should be interpreted in the light of the FTC's purpose, which is to prevent claims which have the tendency and capacity to mislead.

"DRI-COR"

The Filter-Drier You'll Buy
Again, Again,
and Again!



LISTED BY UNDERWRITERS' LABORATORIES, INC. UNDER RE-EXAMINATION SERVICE FOR MAXIMUM WORKING PRESSURE OF 500 P.S.I. OR MINIMUM BURSTING PRESSURE OF 2500 P.S.I.

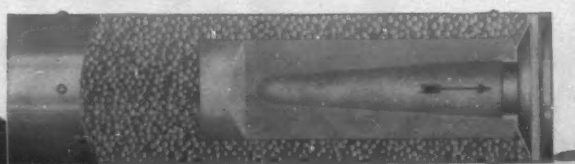


THEY are designed to give you greater satisfaction. That's why jobbers recommend them and servicemen everywhere have switched to "DRI-COR".

With a ceramic fired desiccant filter-core cushioned in a bed of blended MOLECULAR SIEVES AND ACTIVATED ALUMINA, they provide high capacity drying even at relatively high temperatures, micronic filtration, efficient acid removal and low pressure drop.

Because they are pressure sealed, "They Hiss and Tell" when you loosen an end connection seal cap at time of installation—proving they are factory fresh and factory dry.

Also available...
"Dri-Cor" Filter-Drier
Cartridges for Henry
Cartridge Type
Angle Driers.



They have the same features as "DRI-COR" Filter-Driers, except that after being thoroughly reactivated each cartridge is packed in a metal moisture-proof container.

LISTED BY UNDERWRITERS' LABORATORIES, INC. UNDER RE-EXAMINATION SERVICE FOR MAXIMUM WORKING PRESSURE OF 350 P.S.I.



HENRY VALVE CO.

MELROSE PARK, ILLINOIS (Chicago Suburb)
Cable: Hevalco, Melrose Park, Illinois

VALVES, DRIERS, STRAINERS AND ACCESSORIES FOR
REFRIGERATION, AIR CONDITIONING AND INDUSTRIAL APPLICATIONS

CUBES, CRUSHED, FLAKES OR CHIPS...

which
ice machine
is best for
your prospects?



- * You offer each prospect just the ice he needs when you're selling Carrier's 15 ice machines—cubes, crushed, flakes or chips.
- * Only Carrier arms you with the sales clincher of Certified Capacity; you never have to get along on vague promises of ice production "up to" so many pounds per day.

Whatever a prospect's ice needs, you can meet them when you're a Carrier dealer. You offer the most complete line on the market.

You can offer ice production in a known, guaranteed amount... certified in writing. And this production is established under realistic conditions of water and air, not under artificially controlled laboratory conditions.

This one-two punch closes more sales for you. You get it only from Carrier.

Call the Carrier distributor listed in your Classified Telephone Directory, or write Carrier Corporation, 810 South Geddes St., Syracuse, New York.



air conditioning • refrigeration

Electronic Air Cleaning Specified

3 Systems Air Condition \$300,000 Mansion To Avoid Complicated Zone Control Set-Up

By George M. Hanning

LANSING, Mich.—Electronic air cleaning for the above average home is gaining in public favor and offers advantages to the air conditioning and warm air heating contractor, believes Ernest Fox, president of Hager-Fox Heating and Refrigeration Co. here.

Fox claims that among homes valued at more than \$35,000 in which he has installed heating equipment, he has also installed electronic air cleaning.

Electronic air cleaning practically demands a warm air heating system and paves the way for the addition of me-

chanical cooling, if air conditioning is not installed originally, he points out.

Wayne Premier, manager of Hager-Fox' air conditioning and heating department cites the new Howard Sober residence as an example.

"This is the finest home in this area, costing in the neighborhood of \$300,000," he said.

"Originally, wet heat was specified. But to get electronic air cleaning, which the owner desired, specifications were changed to warm air heating."

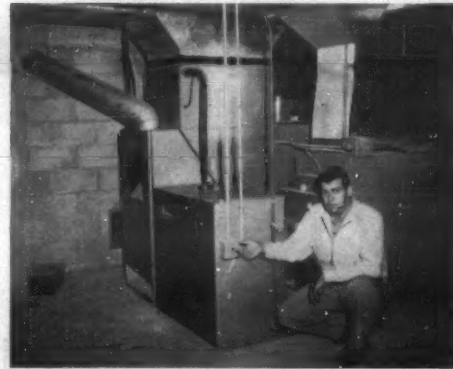
In Sober's sprawling, single story mansion, stretching 135

ft. in length and 64 ft. in depth, Hager-Fox installed three complete air conditioning systems, each handling a separate zone.

"We put in three separate systems, rather than one large central system to keep the equipment as simple as possible, avoiding an elaborate and complicated zone control set-up," Premier remarked.

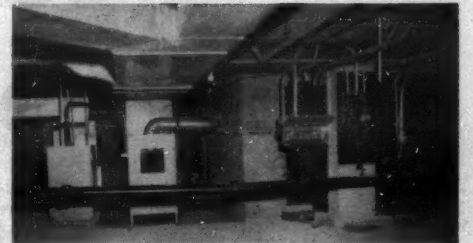
"The key to easy maintenance is simplicity of installation," he observed.

Each system includes a 3-hp. Airtemp water-cooled split system air conditioner, a 150,000 B.t.u. Airtemp gas furnace, an Electro-Air electronic air clean-



COMPACT EQUIPMENT group provides year-round air conditioning for east zone of the Howard Sober residence in Lansing, Mich. Wayne Premier of Hager-Fox Heating & Refrigeration Co. poses between 3-ton condensing unit and electrostatic air cleaner. Behind is furnace with 5-ton add-on coil in overhead plenum.

TWO OTHER UNITS straddle chimney to heat and cool central and west zones. They are located in crawl space. Electric panel board blocks view of unit to right of chimney.



er, and an Auto-Flo humidifier.

A single Minneapolis-Honeywell control, mounted in a central location in each zone, governs the operation of the heating and cooling equipment serving that zone.

Air Cleaning Can Function Without Heating, Cooling

A fan-only switch provides air circulation for electronic cleaning when neither cooling nor heating is required. This is particularly important in order to keep the air clean of smoke while entertaining.

Control will also start the cooling cycle when relative humidity exceeds 60%.

Despite the unusual gently curving walls of the house and the generous dimensions of the high ceilinged rooms, this was not a complicated installation, Premier said. Each zone has approximately the same heat loss and gain so that the same size equipment could be used for each.

The west zone includes three huge bedrooms and a dressing room. The central zone includes the library, enormous sunken living room with floor-to-ceiling windows on the north side, and entry along the south side. East zone consists of an oval dining room, kitchen, maid's quarters, and bar.

Attached Garage Has Gas Unit Heater

The attached garage on the east side of the house could be considered a fourth zone. It is heated by a 100,000 B.t.u. Janitrol gas unit heater.

Air is distributed in each zone through a perimeter duct system. Most supply registers are in the floor beneath windows. In the dressing room and kitchen, where floor locations were not desirable, they were put low on the wall.

High wall returns are used. Each bedroom has a separate return. But central returns are used in dining-kitchen and entry zones.

All mechanical equipment is installed in the basement below the east zone and in the 4-ft. (Concluded on next page)

LOOK... IT'S EASY

to control residential air conditioning with Penn's newest "centers" and RIMSET thermostat!

That is one of the big reasons why more and more air conditioning manufacturers are switching to Penn! Here are a few additional reasons...

Penn's RIMSET thermostat handles 12 different cooling and heating jobs. Interchangeable sub-bases are available... thermostat fits them all... just plug it in. And, it's easiest to read, easiest to set... just dial the rim.

Penn's residential control centers are compact and designed to save installation time with their factory-wired internal circuits. For air conditioning systems with remote condensing units, the *Fan Center* controls air handling equipment while the *Cooling Center* controls remote condensing unit or water chiller.

System Center

For self-contained air conditioning systems, the *Penn System Center* electrically interlocks in one unit all cooling-heating functions.

Include Penn in your designs to get the finest year 'round air conditioning performance. Write to the factory for the complete story.

PENN CONTROLS, INC. Goshen, Indiana
EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N. Y.

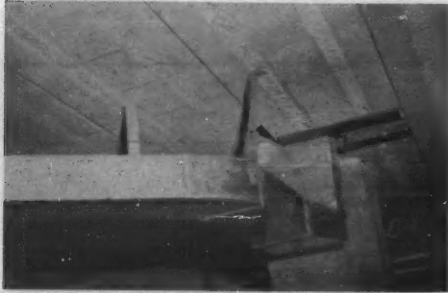
AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES



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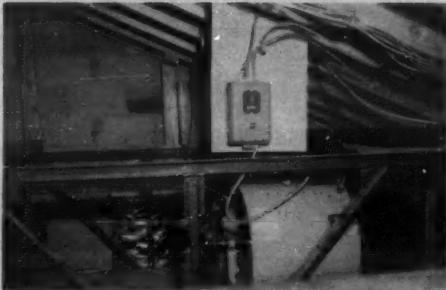
"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Residential Air Conditioning



SECTION OF DUCTS going up through cement block floor shows how hangers had to be Ramset into the cement.

THIS 15-IN. BLOWER removes heated air from attic and disposes it out the chimney in background. It holds attic temperatures to 88-90° F.



(Concluded from preceding page) deep crawl space beneath the other two zones.

Equipment for the east zone is clustered next to the east chimney between the east and central zones. The other two systems straddle the west chimney between the central and west zones.

The basement is 9 ft. deep, allowing sufficient space overhead for ductwork, utility cables carrying mazes of wiring, and plumbing pipe.

A passageway deep enough to permit a man to walk upright leads from the basement to the west chimney. Floor beneath the equipment on either side of the chimney is sunk about a foot below the level of the cement-floored crawl space in order to accommodate top mounted cooling coils and plenums.

Premier pointed out for air conditioning a 3-hp. water-cooled condensing unit is used. It is connected with a 5-ton coil mounted in the furnace plenum. A 4-ton expansion valve gives the system an actual cooling capacity of 3.8 tons. The large coil permits a greater volume of air movement.

The electronic air cleaner is hooked into the return air side

of the system. No fresh air is supplied.

"With the electronic air cleaner and the small number of people involved, no fresh air supply is needed," Premier said. "Smoke and dirt are removed as the air passes through the air cleaner so that it doesn't get stale. Without the addition of moist outside air, the conditioned air is kept drier, too."

A somewhat unusual construction feature in the Sober residence is the floor. It is fashioned of Dox Bloc cement block overlaid with concrete.

"The cement block floor left us with no joist space to run our ducts," Premier noted. "Sheet metal ducts are suspended from the underside of the cement blocks. Duct hangers had to be fastened with a Ramset gun."

"The cement block floor also made us extra careful about locating our risers. Once the floor

was laid, there was no changing them. It all worked out well, though, and we had no trouble on that score."

To help reduce the air conditioning load, 6 in. of Fiberglas insulation was put in the ceiling and 1½ in. Fiberglas blanket plus Celotex in the walls.

In the attic, a Lau blower with 15-in. diameter wheel keeps air temperatures between 88 and 90° F. Fresh air is brought into the attic both through vents under the eaves and through the west chimney air intake opening.

A thermostat controls the blower so that it turns on when the temperature hits 90° F., drawing hot attic air through a short duct to the east chimney through which it is exhausted to the outdoors. When the temperature drops to 88° F., the blower turns off.

Premier pointed out that a hi-

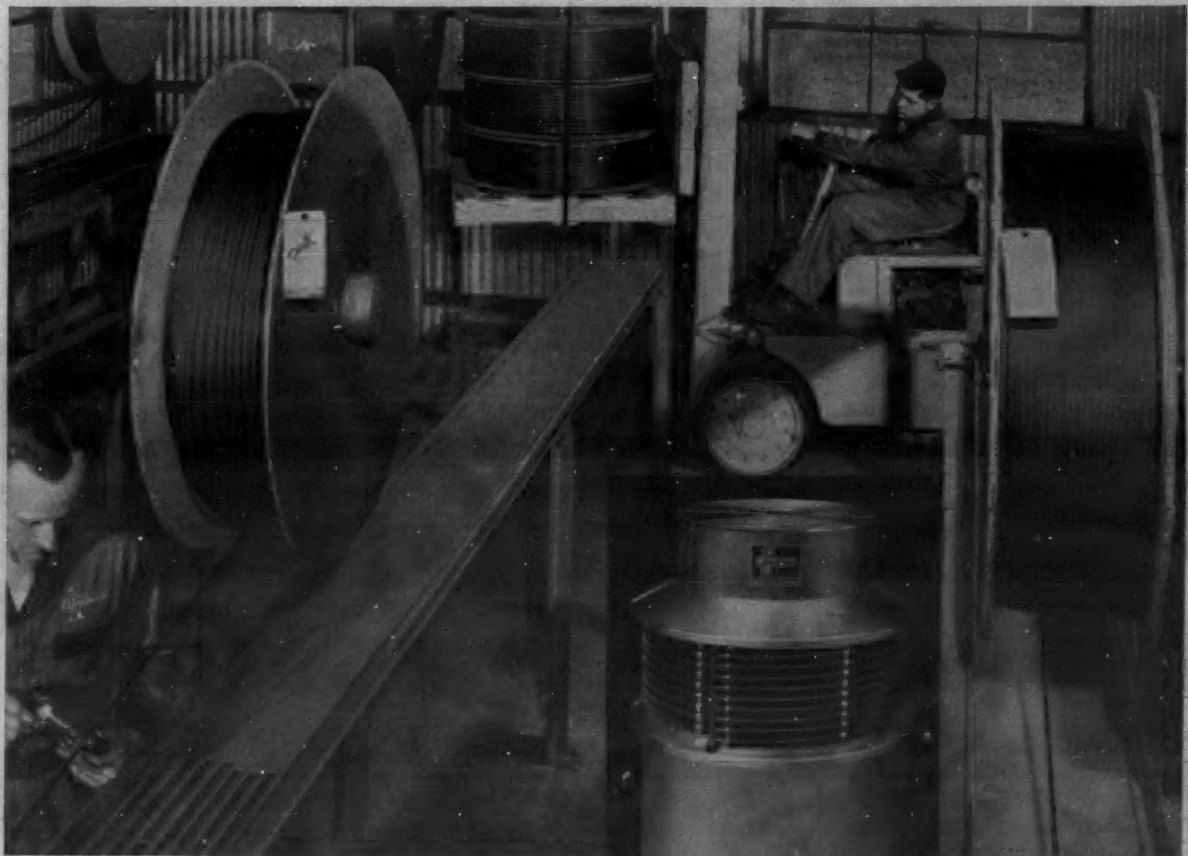
fi set and a television set were being built into the library. Whenever either of these instruments are turned on, a fan in the attic next to the west chimney also turns on.

Room air is drawn through toe space beneath the cabinets, over the hot electronic tubes, and out through a vent to the chimney.

Kitchen exhaust fan is vented through a separate section of the east chimney. Four separate remote blower fans ventilate the bathrooms.

Fox commented that the Sober residence illustrates two trends that he sees evident in the residential air conditioning field today.

One is the growing acceptance of electronic air cleaning. The other is the use of multiple units to gain good control in the place of a zoned air distribution system based on one central unit.



Fandaire air cooled condensers and air conditioners made by F.S. Air Conditioning Corp., Tulsa, Okla., have capacities from 3 through 80 tons. Unique sloping, circular one-piece coil design, which permits 100% surface efficiency, requires Chase Copper tube up to 75' in one length.

New Chase throw-away reel makes six-way saving

Air conditioning manufacturer reports results using 3/8" and 5/8" tube shipped on disposable units

Since Chase introduced its new, convenient disposable reel for shipping small size refrigeration tube, savings have been reported by manufacturers all across the country. Here's a typical story:

1. Scrap losses cut from over 2% to less than 1/2 of 1%
2. Easier inspection of tube on receipt.
3. High-speed reeling-off of long lengths without any chance of kinking or fouling.
4. Tube is much straighter, reducing and making easier the straightening operation required before use.
5. One-man machine loading of up to 1700' of tube without any chance of damage or distention of the tube coil.

6. Reduction of storage and handling problems since it requires less space.

Ask your nearest Chase Representative about extra long lengths of copper refrigeration tube packed on the new disposable reel that simplifies storage and ends reel return problems, protects tube quality and gives you appreciable production-line savings. Or write Chase at Waterbury 20, Connecticut.

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when and where needed

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Room Unit Air Conditioner

"MIRACULOUSLY QUIET"

These attractively finished cabinet models compliment the decor of the most elaborate surroundings.

ZONE AIRS are also available in concealed type units. No duct work required. No tearing out of partitions.

Available for direct expansion, hot or cold water or direct expansion and hot water.

Eight models—1½ to 10 ton capacities.

Most packaging room units—¾ to 2½ ton capacities.

A Few Territories Open

Write for Data Sheet

WITT A. H. WITT CO., Inc.
940 N. Sycamore Ave.
Los Angeles 38, Calif.

Air Distribution Requirements In Year-Round Air Conditioning

Part 3—Fundamentals of Equipment

By Frank D. Klein, Chief Engineer, Governair Corp.

Elsewhere in this text there has been reference to and partial discussion of the latent heat of vaporization. Just how this controls and affects the net refrigeration effect might be seen if it is remembered that, though water boils at normal pressures, etc., at 212° F. additional heat must be added in order to vaporize it into steam at the same temperature.

Water, as such, in its boiling state is still liquid; as steam it changes from this condition to vapor; thus this additional heat to bring about this change in the state of the refrigerant, from liquid to vapor at the

same temperature is known as the latent heat of vaporization. It is a direct influence on the net refrigerating scope of the evaporator.

What is the practical importance of specific heat? (The Liquid Refrigerant.) The specific heat of the refrigerant dictates its relationship to the latent heat of vaporization.

If, as outlined above, the latent heat of vaporization is truly the "refrigerating potential" of a refrigerant, it must be remembered as the refrigerant flows through the system and leaves the expansion valve it must cool the warm liquid it

meets down to the desired temperature of the evaporator.

The net refrigerating effect referred to above is that which remains after this cooling of the warm refrigerant has taken place. Thus, low specific heat in a refrigerant is highly desirable because the lesser amount of latent heat of vaporization required to cause this reduction in temperature the greater the net refrigerating effect.

What then is the practical importance of the specific heat of refrigerant vapor?

We have determined that the specific heat is the capacity for heat of the refrigerant. Thus if the specific heat is high, of the vapor, the less the amount of heat needed to be added to the

saturated vapor, to superheat it, in order to accomplish a lower temperature in the evaporator.

The higher the temperature, the greater the expansion of the superheated vapor and the lesser its density. The lesser the density and temperature of the refrigerant in the evaporator and suction line, the less the amount of vapor available for the compressor to pump. To realize full volumetric efficiencies in compressors the vapor phase must be cool and dense, with resultant superheats held to low minimums.

REFRIGERANT VAPOR DENSITIES DIRECTLY AFFECT COMPRESSOR OPERATION

Reference here now is to reciprocating compressors. Because high vapor densities promote the same efficiencies at lower compressor displacements, and further permit smaller refrigerant lines in the low pres-

sure side of the systems, they are desirable. Yet high pressure drops accompany high vapor densities. As a result medium to low vapor densities are more practical.

Thus with this general understanding of the refrigerants most commonly used, discussion can deal now with the "heart," or the compressor itself. This discussion will cover only the "larger" types of open and hermetic reciprocating centrifugal field is one to itself.

Exactly what is the function of the compressor in refrigeration systems?

Briefly the specific purpose of the compressor is to bring about a rise in pressure of the refrigerant gas returned to it, which is at evaporative pressure, to condensing pressure. In the normal cycle, the so-called "hot-gas" is returned to the compressor just ahead of the suction valve at 65° F. (R-22) which corresponds to a pressure of 112.5 p.s.i.g. With the normal condensing temperature at 105° F. this would correspond to 213.3 p.s.i.g.

Thus the compressor must supply the gas to the condensing medium and apparatus at a pressure by which the condensing cycle may be carried out to its fullest efficiency.

Reciprocating compressors in general: We have all heard such type compressors called "pumps," and that is exactly what they are, i.e., vapor pumps. Generally all such compressors are alike in that they are designed and built with a reciprocating piston and equivalent valve sections working in unison with the piston cycle.

(To Be Continued)

Stahl & Myers Plans \$1 Million Expansion

HOUSTON, Texas—Stahl & Myers announced an expansion program costing more than \$1 million for construction of a central warehouse and office and new stores in Texas City, Beaumont, and Galveston.

Starting six years ago with one store, the firm now sells about 20,000 room air conditioning units a year, according to President Sam G. Myers. At present the company has three automobile air conditioning centers, seven retail stores, a central service center, and a central air conditioning contract division.

The new headquarters will give the firm about twice the space in the present headquarters. It will include a showroom of 12,000 sq. ft., office space totaling 8,000 sq. ft., warehousing of 25,000 sq. ft., and some 20,000 sq. ft. for automobile air conditioning, central air conditioning, and the Stahl & Myers service center.

Myers expects that the expansion will increase the sale of room air conditioners to about 23,000 to 25,000 units a year. The expansion will also increase the number of employees from 165 now to about 250, Myers estimated.

The firm's major lines include "Vornado" room and central air conditioning, York and Worthington central air conditioning, and G-E and RCA appliances and TV. With the expansion, the company will add a line of boats.

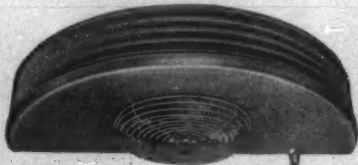
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UNIT COOLERS for every application...

With the addition of the new, hammered aluminum Space-Miser unit coolers, one for normal and one for low temperature, McQuay now offers you a complete line—a unit cooler for every application. Five models and a total of 37 sizes let you select exactly the model and size for every job.

The McQuay Radial unit coolers and the Two-Way unit coolers have been restyled, and also feature heavy gauge hammered aluminum cabinets for longer life, easier handling and quick installation.

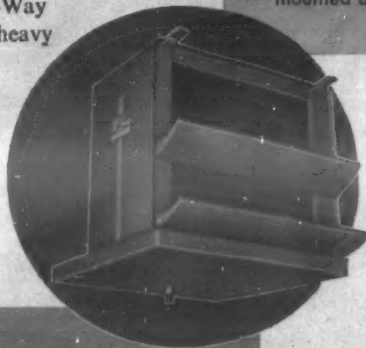
For the most complete line, and complete satisfaction—it's McQuay every time. And, remember, *McQuay Means Quality*. See your McQuay wholesaler in or near your city, or write direct to McQuay, Inc., 1607 Broadway St. N.E., Minneapolis 13, Minn.



Radial Unit Cooler. Eight compact redesigned models constructed with heavy gauge hammered aluminum throughout for light weight and longer life are available. The new McQuay Radial unit cooler features a hinged drain pan for easy installation and maintenance.



Two Way Unit Cooler. Ten models designed for cooling back bars, reach-ins and other limited space applications. Units may be wall or ceiling mounted and are U.L. approved.



Pacemaker Unit Cooler. Ten compact sizes available in single, double or triple fan and motor units offering efficient low cost cooling for walk-in coolers where temperatures above 35 degrees are required. Continuous galvanized steel, bonderized and enameled cabinets provide the finest corrosion resistant assembly available. All McQuay Pacemakers are equipped with a built-in heat exchanger, mastic coated drain pan, directional louvers and slotted hangers for easy installation.



Low Temperature Space Miser Unit Cooler. Three models designed to balance with nominal 1/4, 1/2 and 3/4 H.P. low temperature condensing units. Normal temperature McQuay Space Misers are also available in four models designed to balance with nominal 1/4, 1/2, 3/4 and 1 H.P. condensing units.

McQuay INC.

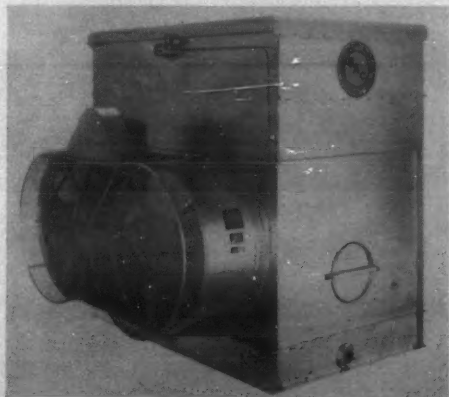
AIR CONDITIONING • HEATING • REFRIGERATION



McQuay Means Quality



McQuay units feature the exclusive Ripple-Fin coils which create maximum turbulence and have wide, full fin collars that act as automatic spacers to form a tube around the coil tube for positive, permanent bond, greatest heat transfer and protection.



FLEXI-TOWER requires no mechanical change other than a larger pump to increase its capacity, according to Baltimore Aircoil Co., Inc., who recently introduced the unit, which it describes as a new concept in cooling towers.

Flexi-Tower--

(Concluded from Page 1)

increase in pump size, they were told. Other than that, no mechanical changes take place in Flexi-Tower to effect capacity changes.

Standard equipment includes a pressure gauge for accurate calibration of spray pressure and resultant capacities.

Flexi-Tower is a factory-assembled, blow-through, propeller-fan cooling tower with counterflow design.

The entire unit has heavy construction with all-bolted sections for easy handling and rigging in the field.

Hot-dipped galvanized steel is used throughout finished by a coat of zinc-chromatized aluminum paint.

All moving parts—fan, bearings, motor, drives—are located externally at working level. Man-size access doors provide entry and access to the extralarge lift-out strainer. Wide-blade, slow-speed fans are made of heavy, zinc-plated steel.

Actual production on the Flexi-Tower will begin in November, according to W. E. Kahlert, vice president in charge of sales. First units are expected to be ready for delivery by the end of December.

"New lower prices" are claimed for the new towers.

Mahuron Heads Lau Western Div. Plant

DAYTON—Richard F. Mahuron has been appointed general manager of Lau Blower Co.'s

western division plant in Irwindale, Calif., according to S. F. Hipple, Lau vice president.

The appointment will improve the efficiency of the western division and it will be operating more and more as an integrated plant, Hipple said.

Mahuron has been works manager of the Irwindale plant since 1955 and was in the same capacity with the Fabristamp Corp. from whom Lau purchased the plant.

Sales will continue under the direction of G. R. Mergenthaler who has served in this capacity on the West Coast since 1952.

Knight Recovering From Operation

CHICAGO—M. W. Knight, vice president of Peerless of America, Inc., was reported recovering "very nicely" after an operation Oct. 8 at Grant hospital for a spinal fusion.

Pressed Steel To Move To Highly Automated Swansea, Wales Plant

OXFORD, England—Pressed Steel Co., Ltd., plans to move its refrigeration and appliance manufacturing facilities to a new government-built plant in Swansea, Wales in 1960, the company has announced.

The new factory will be one of the most modern of its kind in the world and will embody a high degree of automation, the company claims. Products it will produce will be highly competitive in both home and export markets, it believes.

The firm's Prestcold Refrigeration Div. is now divided between its Cowley (Oxford) and Theale, Berkshire factories.

The project repeats a precedent established by the company in 1947 when it helped to relieve unemployment by occupy-

ing a government-sponsored factory in Linwood, near Glasgow, Scotland, which is now employing more than 2,000 persons.

The Swansea plant is expected to employ 2,000 persons within 18 months of occupation and increase the labor force to about 4,000 in four or five years.

Jack White at Sealed Units

ST. PETERSBURG, Fla.—After 12 years with Frigidaire in Germany, Jack Hans White has joined his father James Hans White in Sealed Units, Inc., repair and rebuilding plant for sealed systems of all types located here. Jack White will direct the firm's laboratory and development work.

Routh Named To Head Airtemp Advertising And Sales Promotion

DAYTON—Richard R. Routh, Jr. has been named director of advertising and sales promotion for Chrysler Corp.'s Airtemp Div. here by Joseph B. Ogden, divisional vice president-sales.

Routh comes to Airtemp from his position as manager of advertising and sales promotion for the Home Heating & Cooling Dept. of General Electric Co. at Tyler, Texas.

Before joining G-E, Routh served as advertising and sales promotion manager for Kerby Saunders, Inc., Carleton-Stuart Corp., and Thermodyne Corp., all of New York. He also was assistant to the president of the Association of Better Business Bureaus, Inc. in New York City.



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A-P's complete capacity line of thermostatic expansion valves (1/4 to 25 tons, R-12) is geared to perform on:

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2. **Air conditioning applications** requiring pressure limit. A-P gas charged (type 209) TXVs are ideal for the job.
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These valves complement industry's most complete line of refrigeration and air conditioning controls. Take advantage of this single source availability—your assurance of dependable performance.



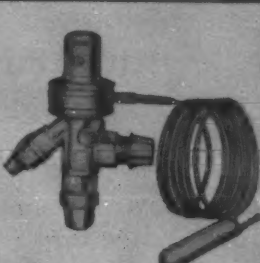
MODEL 206C
Fixed superheat. R-12, R-22 or Methyl. Capacity: 1/4 thru 1 1/2 tons R-12.



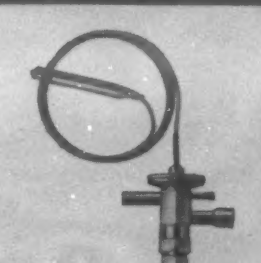
MODEL 207DE
Adjustable superheat. External type equalizer. Capacity: 1/2 thru 3 tons R-12. 1, 2, 3, 5 tons R-22.



MODEL 207C
Adjustable superheat. R-12, R-22 or Methyl. Capacity: 1/2 thru 1 1/2 tons R-12.



MODEL 209
Adjustable pressure limit and superheat. R-12, R-22 or Methyl. In 1/4 thru 1 1/2 tons R-12.



MODEL 214
Adjustable superheat. 1, 2, 3 tons R-12. 2, 3, 5 tons R-22.



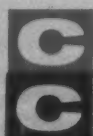
MODEL 217
Adjustable superheat. Solder connections. Capacity: 5, 7 1/2, 12 1/2 tons R-12; 7 1/2, 11, 19 tons R-22.



MODEL 218
Adjustable superheat. R-12 (16, 19, 25 tons). R-22 (25, 30, 40 tons). Available with pressure limit.



DISTRIBUTORS
Both flare and solder types. Capacities: flare type thru 3 tons R-12. Solder type thru 40 tons R-12.



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Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)

"Honey," he exulted, "we're going to Atlantic City. Run downtown and buy some decent dresses."

"If I'm going to Atlantic City on a convention," his proud helpmate rejoined, spunkily, "I'll do nothing of the kind. I'll get dresses like the other women will be wearing."

Bragged one toolmaker to another:

"My wife is so thrifty that she cut up one of her old dresses and made me three new neckties."

"Huh. That's nothing. Mine made herself a new bathing suit out of three of my ties."

True Story

Joe Blow and his wife were sharing a seat on a not-too-crowded bus. An adjoining window was open, and a cold draft doused them unwelcomely.

When Joe noted his wife's acute discomfort, he suggested that she change to a single seat farther back on the vehicle. But she shook her head, and stuck it out.

Five stops later Joe observed that the continuing draft was disarranging his wife's attire. Again he thoughtfully suggested that she take another seat, and again she refused to leave his side.

This procedure continued at intervals for several more blocks, until a sudden gust of wind wrecked her freshly-waved coiffure.

This time her husband insisted that she change seats, and she agreed that it was high time.

Quickly she walked to the rear of the bus and sat down beside a gimlet-eyed little old lady.

Our Heroine's seat-partner tapped the disarrayed wife on the arm.

"That was the right thing for you to do, honey," she congratulated. "You young girls have to look out for them fresh mashers."

Probably Untrue Story

Trouble, trouble, trouble, all night for the policeman. Upon returning home at 3 a.m. after a rugged tour of duty, he was so upset by all the troubles he'd seen that he couldn't sleep.

Arising from his downy-double-bed, he searched for the bathroom, aspiring to find aspirin and sleeping pills in the medicine cabinet.

Not one could be found.

Breathing heavily, and won-

dering audibly why he hadn't accepted that nice job with the A & P, he dressed in the dark, so as not to awaken his wife.

Then he walked two blocks to an open-air-night drugstore.

"Gimme a bottle of aspirin and some of them put-you-to-sleep tablets."

"Coming right up."

In a moment the druggist handed the "copper" what he'd ordered. While changing a five-dollar bill the druggist took a second look at his late-owl customer.

"Hey, ain't you the cop on our beat?"

"Yeah, yeah."

"Then why are you wearing a City Fireman's outfit?"

Curtain. Blackout.

Era of the 'Common' Man

Here's the cleanest story vis-a-vis the so-called "Age in

Which Man Is Acting Awfully Common" we've heard lately:

"Brother, can you spare 15 cents?"

Grumped the accosted one: "Why don't you ask me for a dime for a cuppa cawfee like other panhandlers do? What's the extra nickel for?"

"Mister, it's after 6 p.m.; and after 6 o'clock I hafta charge time-and-a-half for overtime."

Life In the Old Boy Yet

One super-charged evening in October a lithe blonde, who was shopping around for a suitable bouquet, spied an old fellow calmly trimming a plant in a small florist establishment.

"Have you any passion poppy?" she asked the octogenarian.

The old fellow looked surprised for a moment. Then he grinned:

"You just wait till I get through pruning this lily."

Add Newspaper Boners

"Lady wishes position as housekeeper for widower; no objection to having one child."—Scranton (Pa.) News-Times.

Secretary with intelligence, personality and at least 3 years' legal experience for interesting post close to a boss full of ideas.—The New York Times.

Gov. Robert E. Meyner will start the \$750,000 campaign with a dinner speech Tuesday evening. It will run one month.—The New York Times.

The cold war will ease still further. The East and the West are sure to get a little closer together, or less far apart.—Kiplinger Washington Letter.

Harvey Is Too Busy Sending Secretary.—Muncie (Ind.) Evening Press.

At this point your mind has chosen sides and is now allied with your slim attractive self, intent on getting rid of the burdensome pounds. From here on, seduction is almost easy.—Vancouver (B.C.) News-Herald.

No Comment

Shaggiest dog story we've heard recently involves an intelligent collie who encountered his first parking meter.

He sniffed its base, then reared up on hind legs to read instructions on the top.

"Man," barked the hep collie, "dig that crazy pay toilet."

For Your Reprint Copy

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GET MORE BUSINESS FROM EVERY BUSINESS



with GENERAL ELECTRIC'S Complete Air Conditioning Line

Stores, offices, office buildings, factories—large buildings and small ones—old buildings and new ones! Every business is a prospect for General Electric Commercial and Industrial Air Conditioning because the G.E. line is complete—and flexible.

G.E. Zone-by-Zone Concept Gives You Big Sales Advantages

General Electric's Zone-by-Zone concept puts you way ahead in selling points over field-assembled systems. *Planning is simplified*—no need for equipment rooms—minimum need for fittings and piping—no long duct runs—maximum saving in floor space. *Economies are substantial*—no major alterations or serious interruption to business during installation—no shutdown of entire system for maintenance, units are individually serviced—no heavy initial outlay—financing to meet individual budgets.

Chart Your Progress With G.E.'s Blueprint For Leadership

A complete line of quality products is only the beginning! General Electric's BLUEPRINT FOR LEADERSHIP Plan gives you much more! Attractive financing plans—for you—for your customers! A course in selling—national advertising and promotion—guided local advertising and promotion—plus the selling power of the General Electric name. Every-

thing it takes to assure the leadership position for General Electric dealers. Why not plan your future with G.E.? Contact your nearest General Electric distributor—you'll find him listed in the yellow pages of your telephone directory...or mail coupon today. General Electric Company, Air Conditioning Department, Troup Highway, Tyler, Texas.

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**YOU GET
DOUBLE PROTECTION**
against corrosion...
against falling
or splashing liquids



TYPE DP
1 to 125 hp

**with WAGNER
TYPE DP MOTORS
designed to meet more
application needs**

Wagner Type DP Motors offer the *double protection* of rugged corrosion-resistant cast iron frames and dripproof enclosures so well designed that the DP Motor can handle many applications that formerly required splashproof motors.

These Wagner Motors are built in the new NEMA ratings that pack more power in less space, are lighter in weight and are easier to maintain.

SLEEVE BEARING MODELS AVAILABLE

The entire line of ratings through 125 hp is available with ball bearing construction as illustrated, or with steel-backed, babbitt lined sleeve bearings that have high load carrying capacity and provide quieter operation.

Let a Wagner Sales Engineer show you how these motors can be applied to your needs. Call the nearest branch office or write for Wagner Bulletin MU-223.

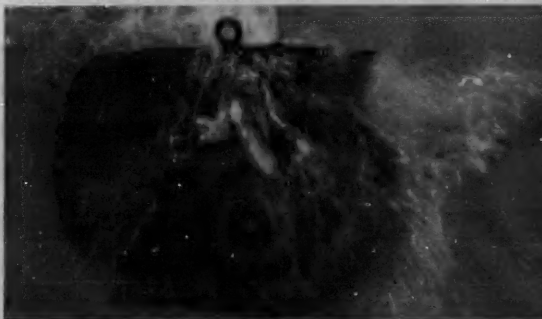
**1 to 125 HP—1750 RPM—40°C
NEMA FRAMES 182 through 445U**

Wagner Electric Corporation
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WH55-9



Air intakes and outlets are positioned to provide complete dripproof protection.



DOUBLY PROTECTED—Wagner DP Motors offer the double protection of completely dripproof enclosures and rugged cast iron frames that can take rough handling and resist corrosion.

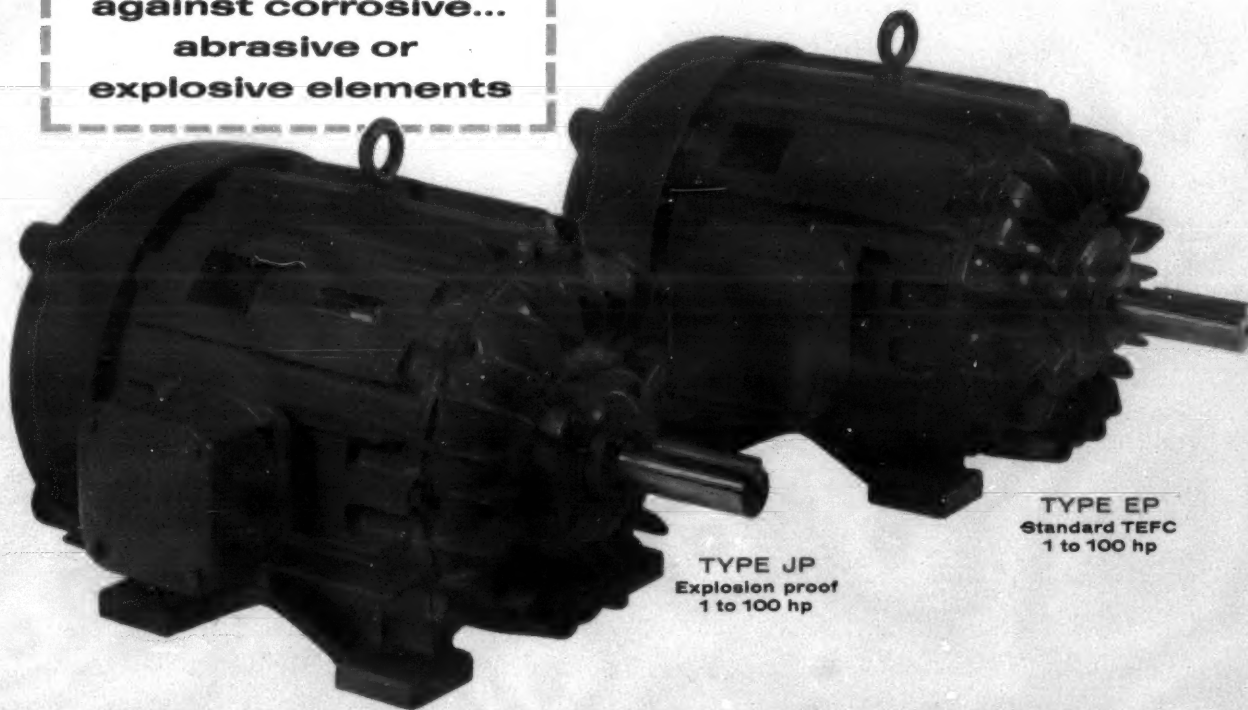


CAN BE RELUBRICATED—Factory lubrication will last for many years in normal service—but openings are provided to permit the relubrication that adds years to motor life under severe conditions.



COOL RUNNING—Specially designed baffles direct cooling air through the motor to reduce stator temperature—thus increasing motor life. Blowers, cast as part of the rotor, move large volumes of air without noise or vibration.

**YOU GET
EXTRA PROTECTION
against corrosive...
abrasive or
explosive elements**



TYPE JP
Explosion proof
1 to 100 hp

TYPE EP
Standard TEFC
1 to 100 hp

with Wagner totally enclosed motors... protected for longer motor life

If you need motors that will keep production rates up... that will give the continuity of service that is so important to automation... that will operate with complete dependability under the most severe conditions —Wagner totally-enclosed motors are your soundest choice.

Type EP Motors offer protection against corrosion, dust, abrasives, fumes, steel chips or filings. Type JP is explosion proof as well — designed and approved for use in explosive atmospheres.

NEW NEMA FRAMES—These motors are built in the new NEMA Frame sizes from 182 through 445U, with ribs that add mechanical strength and increase the surface cooling area. Effective cooling system adds to motor life.

Let your Wagner Sales Engineer show you how these protected motors can bring you savings on initial motor costs, maintenance costs and continuity of operation.

1 TO 100 HORSEPOWER—4 POLE, 60 CYCLE—NEMA FRAMES 182 THROUGH 445U

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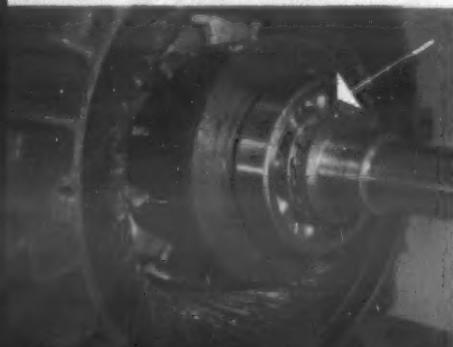
The ball bearings used in these motors are of the highest quality, with more than ample capacity to provide long troublefree service under heavy loads.

BEARINGS CAN BE RELUBRICATED

Factory lubrication will last for many years under normal service, but openings are provided to permit relubrication that adds years to motor life under severe conditions.

SEALS KEEP BEARINGS CLEAN

Both ends of these motors have running shaft seals to keep the bearings clean. Bearing housings are effectively sealed to prevent escape of grease.



Plastics Firm In Tennessee Finds It Needs 40 to 45% r.h. For Top Production Efficiency

By George M. Hanning

BROWNSVILLE, Tenn.—Air conditioning just for human comfort—good enough for New York—is not good enough for Tennessee, Benjamin R. Mascolo, vice president of American Kleer-Vu Plastics, Inc. has discovered.

When the company built its new 32,000-sq. ft. plant here last spring, it was air conditioned throughout for the comfort of employees. Two 50-ton Carrier systems were installed for the plant and a 10-ton packaged unit for the offices.

The equipment was designed to hold 50% relative humidity at 78° F. This was presumably enough to keep the transparent

acetate used in the manufacture of wallet inserts, blue print envelopes, photo albums, sheet protectors, and three-ring binders from waving. Waving interferes with efficient production.

Equipment Listed

To air condition the single-story, red brick plant, Arnett Hill of Hill's Electric Service here, installed two 50-ton Carrier compressors in an equipment room at one end of the building. Two Marley "Aqua-towers" of the same capacity were mounted outside the equipment room. A 2 million B.t.u. Ajax boiler for heating was also installed in the equipment room.

In the plant area, just outside the equipment room, two air handling units, one for each compressor, are mounted on a 20-in. bar joist about 20 ft. above the floor.

The air handling units are fitted with both cooling and heating coils and filter banks. Make up air is taken directly from the plant itself, filtered, cooled and dehumidified, reheated if necessary, and forced through a long duct running most of the length of the 135-ft. by 200-ft. plant.

Each unit handles half the factory area. Minneapolis heating and cooling thermostats mounted on the wall behind the air handling units control their operation. Each system operates independently from the other.

Compressors Equipped With Unloaders

To give the plant the extra humidity control it requires, the 6-cylinder compressors are equipped with unloaders. They run constantly, Hill explained, unloading cylinders as needed to keep temperatures at a comfortable level.

To serve the office and reception areas that are stripped along half of one side of the

structure, a 10-ton packaged Carrier unit is installed in the factory area next to the wall separating office and production floor.

Ducts run from this unit in either direction, giving high wall discharge into the areas they serve. The unit has its own Carrier cooling tower mounted on the roof above it.

Hills said that he selected the two central systems for the factory area over packaged units because they give a more even temperature throughout the plant and will perform with less operating cost.

Severe Humidity Conditions

Though the plant has been operating only about six months, Mascolo has found that humidity conditions in west Tennessee are more severe than those in New York, where he operated previously.

Now he feels that 40 to 45% r.h. is needed for most efficient production. To get this, he is studying a proposal to add extra direct expansion coils in the air handling units and replacing the present heating and cooling thermostats with special heating and cooling thermostats with a fixed differential between heating and cooling.

In addition, the proposal calls for 12 atomizer type humidifiers at equal intervals throughout the plant for winter humidification.

American Kleer-Vu's Brownsville plant was constructed by Max Bishop, local builder. According to the State of Tennessee Industrial and Agricultural Development Commission, it is the only fully air conditioned plant completed in Tennessee within the past year.

American Kleer-Vu has its headquarters in New York City. B. B. Oscher is president. It has another plant in Caguas, Puerto Rico.

Industrial Air Conditioning



ONE OF TWO 50-ton Carrier air handling units that provide comfort conditions and low humidity for the American Kleer-Vu Plastics, Inc. plant in Brownsville, Tenn. Compressors and boiler for heating are located in room in background.



TWO COOLING TOWERS handle needs of 50-hp. compressors in mechanical equipment room directly behind the towers.



10-TON PACKAGE unit mounted in the plant area serves the offices and reception room on the other side of this wall.

Complete! Compact!

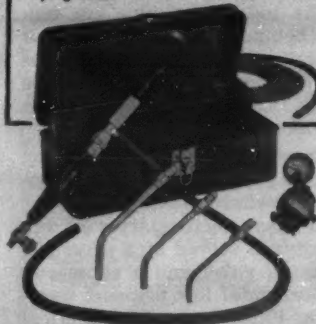
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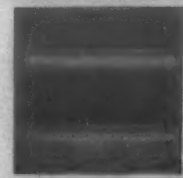
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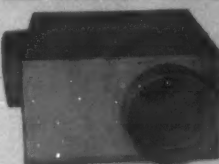
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UNI-SILENCER* MODEL B. Higher pressure drop, maximum acoustical efficiency



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E K ROOF VENTILATOR SILENCER for power roof ventilators

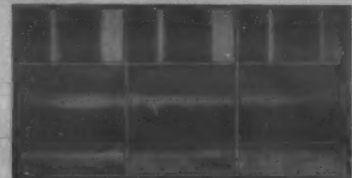
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NAME..... ADDRESS..... CITY..... ZONE..... STATE.....

8-In. Flat Slab Construction Helps Determine Design of Office Building Air Conditioning

OKLAHOMA CITY—Because of the depth of supporting beams in large buildings, one is accustomed to seeing a floor separation of at least 2 to 3 ft. Recently, however, buildings are appearing with a central core design which provides lateral bracing for the structure, and with the use of lightweight aluminum walls, allows a much narrower floor separation.

For example, the new 17-story Fidelity National building in Oklahoma City has a flat slab between floors that measures only 8 in. from the ceiling of one level to the floor of the next. The flat slab structural design in this building, plus low

floor-to-ceiling height and a minimum equipment space on each floor, combine to determine the design of an unusual air conditioning system which utilizes all Trane equipment, The Trane Co. reported.

The owner required individual room control in the perimeter zone with a separate interior zone. Specific restrictions on system design included:

1. Denial of equipment room space on the second through 17th floors.
2. Lack of space for horizontal duct or pipe runs to perimeter zone because of low 9-ft. 9-in. floor-to-floor height.
3. Prohibition of outside wall penetration for relief or supply

of outside air from the second through 17th floors.

4. Provision for future movement of interior partitions without revision of mechanical system.

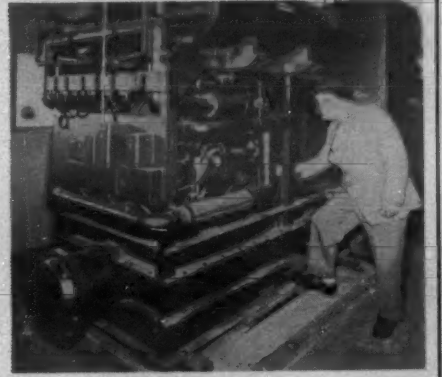
5. The desire to use basement space for offices, tenant storage, and file rooms.

A most economical selection of refrigeration equipment was made by selecting it in the preliminary design stages and using the capacity of this equipment to determine the size of the building windows, according to the report.

A Trane "CenTraVac" hermetic centrifugal compressor, boiler, circulating pumps, air handling equipment, domestic

Another Touch of Modernity

INDIANA university's expanded Southeastern Center added one other touch of modernity by installation of 24 Dunham-Bush, Inc. CRV remote room units in corridors, vestibule, and offices to air condition the building. Other D-B air conditioning equipment used in the structure includes a VAH-64 air conditioner and a PC10,000 Heat-X package chiller. Francis E. Stoner, P&H Co., Jeffersonville, Ky. was the contractor who used D-B aid.



hot water heater, and drinking water chiller were all placed in a penthouse above the 17th floor.

"Supply ducts and warm and chilled water piping to perimeter zone units have traditional-

ly been located in interior shafts, because steel beams supporting the customary heavy masonry walls restrict their passage up or down inside exterior walls," it was noted.

"In this case, however, the lightweight aluminum and porcelain enamel exterior walls did not require the support of these spandrel beams.

"As a result, the supply air and piping radiate out from the penthouse, over the 17th floor ceiling and down out-board of the columns, just inside the metal skin walls, where they are convenient for connection to perimeter air conditioning units."

Approximately 1,000 Trane induction "UniTrane" units serve the perimeter offices. They are located on a module between each mullion which allows future movement of partitions without revision of the mechanical system.

The induction units are hidden behind wooden paneling or metal wall-to-wall enclosures which blend with each office decor. Each office has its own thermostatic controls.

The interior zone is served by four high pressure risers dropping down the center core. At each floor, each quarter of the building is served by a pressure-reducing valve and a short run of horizontal low pressure ductwork. Each quarter is identical on the fourth through the 17th floors.

A return air fan is used to return all the air to a pressurized fan room in the penthouse where the two primary air fan units and the one interior zone high pressure unit take return air as the season dictates. Unused return air is relieved from the penthouse to prevent excessive pressure in the occupied space.

The Fidelity National building, with its air conditioning system, was designed by Sorey, Hill & Sorey, architect-engineer. The Trane air conditioning equipment was installed by Wattie Wolfe Co. Both firms are located in Oklahoma City.

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Owner: Triborough Bridge and Tunnel Authority
Heating, Ventilating, and Air Conditioning Contractor: Almirall & Co., Inc.
Engineer: Guy B. Penno
Architects: Leon & Lionel Levy

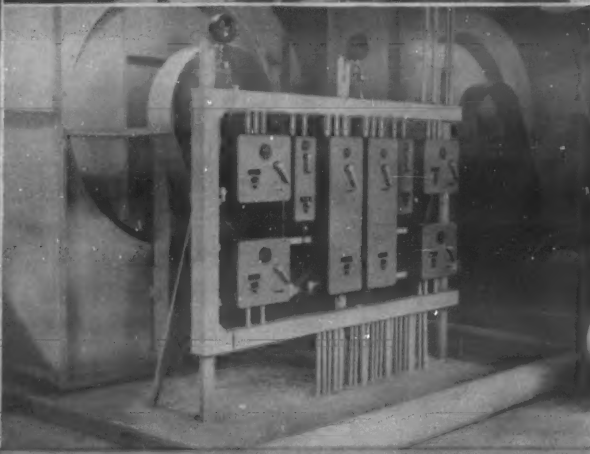
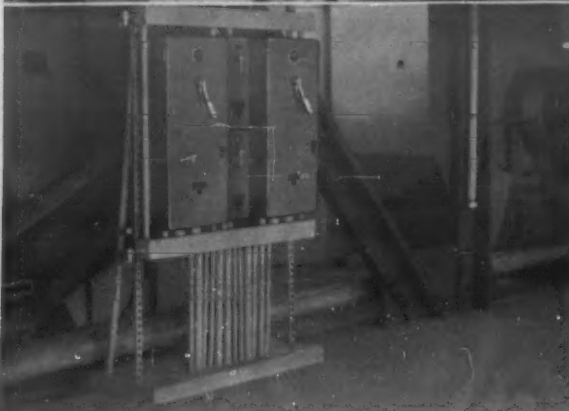
More and more buildings—like the huge New York Coliseum—are being equipped with Allen-Bradley quality motor control.

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Specify Allen-Bradley—the motor control you can install . . . and forget!

Bulletin 712 combination starters for booster and condenser water pumps.

Bulletin 740 reduced voltage and Bulletin 712 combination starters for chilled water and condenser pumps.



Bulletin 712 combination starters, Size 1 and Size 4, mounted in fan room.

This fan room control panel uses eight Bulletin 712 combination starters—including Sizes 1, 2, and 3.

ALLEN-BRADLEY

MOTOR CONTROL

QUALITY

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Summarized In U. of Illinois Report

One-Pipe Forced Circulation Hot Water System

1. Object: The principle objectives of the tests were to compare the operating characteristics of the heating system when operating (1) with a control system permitting the boiler to be used to heat domestic hot water as well as to supply heat to rooms, and (2) with a control system permitting the boiler to supply heat to the rooms only.

2. Results:

a. Operating the system with a flow-control valve and low-limit control maintaining a minimum boiler water temperature of 165° F. resulted in an average increase in fuel consumption of approximately 0.5 gal. per day as compared to operation without a flow-control valve and low-limit control.

b. Fuel and power savings resulting from operation with reduced room air temperatures at night range from zero up to about 10%, depending upon the method of control, and in average winter weather the indoor air cooled not more than 6° F. during the 7.5 hours that the thermostat was set back at night.

c. In 0° F. weather the average difference between the tem-

perature of the air 3 in. below the ceiling and that 3 in. above the floor was of the order of 4.5° F. for all methods of operation. A difference of only 0.5° F. between the maximum and minimum air temperatures at the 30-in. level was obtained during a cycle of operation.

d. When the radiators were located along exposed walls there was no noticeable movement of cool air across the floor in any of the rooms. With the radiators located along inside walls definite cool drafts were observed, and the floor-to-ceiling air temperature difference was increased by 3° F. to 5° F.

e. In zero weather the ratio of the rate of heat loss through

A cooperative research program in steam and water heating and summer cooling has been carried on at the University of Illinois since 1940. This program has been carried out under the terms of a cooperative contract between the Institute of Boiler & Radiator Manufacturers and the University of Illinois Engineering Experiment Station.

A summary outline of some of the results of the research has been compiled by W. S. Harris, M. D. Eide, and R. D. Barkman of the University of Illinois. Since this concise and informative material may prove useful to those involved in installations of this type of equipment, the summary is being published in a series of instalments in the NEWS.

an uninsulated brick veneer recess to the heat loss rate through the fully insulated brick veneer wall was about 16:1. On reflective surface located back of the radiator, or 1 in. of rigid insulation reduced this ratio to about 9:1. The use of one reflective surface plus 1 in. of rigid insulation reduced the rate of heat loss until it was practically equal to that ob-

tained back of a free standing radiator.

f. Less than 50% of the heat required to heat the rooms in the Research Home was supplied by the radiators. The remainder of the heat was supplied by other sources, such as the chimney and uninsulated heating pipes, with a small amount supplied by lights and occupants. About 80% of the heat con-

tained in the fuel burned was made available as useful heat in the house.

(To Be Continued)

Electric Resistance Heating To Be Panel Topic Nov. 12-14

ATLANTA—A panel discussion on "Electric Resistance Heating in the Home Market" will be one of the features of the general sales conference of the Southeastern Electric Exchange to be held at the Atlanta Biltmore hotel from Nov. 12 to 14.

The panel session will be conducted by L. L. Koontz, Appalachian Power Co.; M. T. Reeves, Georgia Power Co.; and T. B. Knox, Virginia Electric & Power Co. C. M. Wallace, Jr., vice president in charge of sales, is chairman.

No Matter what the Size...

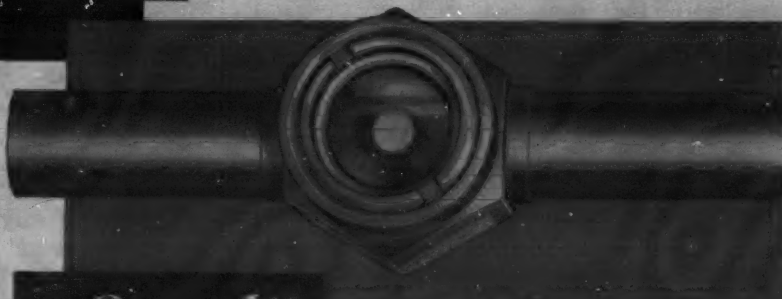
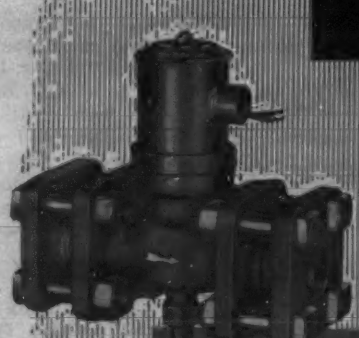
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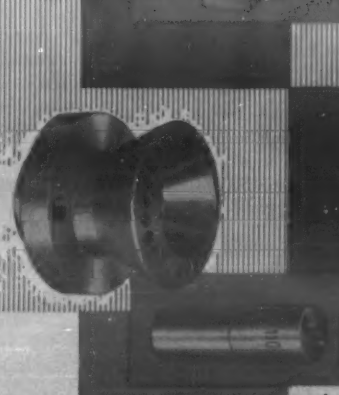
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Every
Time

by
Jimmy
Hatlo



Good News for Commercial Refrigeration —Frozen Foods Are Zooming

COMMERCIAL REFRIGERATION occasionally seems relatively uninspired to the people who deal in it regularly.

To some it appears to be a business which lacks the glamor, and high dollar volume, of consumer goods like residential air conditioning, household refrigerators and freezers.

It doesn't get the publicity air conditioning reaps, either. Yet, it underpins the entire refrigeration industry.

Furthermore, the growth possibilities inherent in the Frozen Foods Revolution should make commercial refrigeration exciting. What's with that so-called Frozen Foods Revolution? Well...

More than 400 packers now process quick-frozen foods, and they do a \$700,000,000 business already. (The sky's the limit for their expansion.) This year 400,000,000 frozen pies probably will be sold, along with 50,000,000 prepared dinners, 70,000,000 frozen desserts, more than 320,000,000 lbs. of frozen potato products, and 70,000,000 lbs. of fish sticks—plus many another lesser item.

Now there is remarkable progress.

Special "national" dishes (quick-frozen) are gaining rapidly in popularity. More than \$80,000,000 worth of Italian, Chinese, Mexican, Jewish and other "nationality" dishes will be sold (frozen, of course) to heat-and-eat buyers in 1958, it is predicted.

As these new ready-prepared foods gain in popularity, high-profit crops for farmers, such as luxury vegetables, are vastly increasing the potentiality for agriculture.

Present surplus acreage (wheat, corn, cotton) is being diverted and converted to this new type of farmstuff production.

And that's great news for suffering taxpayers!

As a time saver, frozen foods have obvious appeal to women. Every time a woman opens a can of frozen orange juice she saves eight and a half minutes of elbow-wrenching (the time it takes to squeeze nine oranges to obtain the same amount of juice).

Frozen foods save money, too. Moreover, they rate extra high nutritionally. Vegetables are quick-frozen quickly after being plucked from a field, and are fresher

than unpackaged vegetables which usually have spent four to five days in transit from the field to marketplace.

Food stores appreciate the savings inherent in frozen foods, too. They reduce spoilage and wastage, and up profits.

Outside of camping enthusiasts, who cleans a raw fish these days?

Housewives would rather buy nearly 50 million pounds of frozen fish a year in the aggregate than go to the fish market.

Crabmeat, lobster—plus about 30 vegetables, 10 different juices, fish and fowl, meats and soups, pizza pies, and chow mein are available to housewives anywhere, any time—thanks to superb quick-frozen foods.

Some say that World War II started the frozen food boom. Vital steel was needed to can foodstuffs, but no metal was required to package frozen meats or vegetables or fruits. Uncle Sam's vast purchases of frozen foods for the Armed Forces not only gave women their cue, but sold men in uniform on their goodness.

America's midwest still is dotted with refrigerated locker storage plants which wartime meat rationing made so popular.

A family could buy a side of beef, have it cut and packaged, and keep it on "frozen safe deposit" until needed.

This still is done, incidentally.

Meanwhile, in the metropoli, frozen foods were invaluable time savers to women who riveted in defense jobs all day, and had to produce dinners and breakfasts for their menfolk morning and night.

At the end of World War II women could buy freezers (or refrigerators with big freezing compartments) for their own homes. Thereupon the frozen food industry expanded at a galloping rate.

In the last 10 years frozen food production has upped from 900 million pounds annually to more than 5,000 million pounds in 1957.

Nearly seven million home freezers have been bought in the same decade.

Freezer-owners need frozen foods purveyors. And the latter need more low-temp commercial refrigerating space to keep up with burgeoning demand.

It looks like a good long-range deal for the commercial refrigeration industry.

Air Conditioning & Refrigeration News, October 27, 1958

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VOLUME 85, No. 9, SERIAL No. 1,544, OCTOBER 27, 1958



LOW-COST LEAK DETECTOR NOW AVAILABLE

Carl Herrmann Associates
Pasadena, Calif.

Editor:

I was interested in reading Mr. A. E. Manning's recent technical article in the Sept. 22 issue of your publication. In the article, he mentions that Type H General Electric Leak Detector used in the detection of leaks in refrigeration systems costs around \$700 and an expenditure of this amount of money is not justified in the air conditioning field, even in the larger service operations.

Recently, General Electric has developed a new low cost leak detector which sells for about \$200. This new leak detector uses the same principle of detection as the older model H employed. It is my opinion that a \$200 instrument of this type certainly is justified in industrial air conditioning operations.

GEORGE FUSON

Editor's note: This leak detector was described in the What's New section of the Aug. 4 issue.

ASRE PLANS MORE PAPERS ON Peltier Effect

Si Williams Co.
Cleveland, Ohio

Editor:

Herbert L. Laube cited several good questions related to practical application of the Peltier Effect, (Off The Chest, Sept. 8 issue, AIR CONDITIONING & REFRIGERATION NEWS.)

The June 24 ASRE technical session has done the job intended: to create interest and "break the ice."

As an immediate follow-up, several major companies in the refrigeration and air condition-

ing field are preparing technical papers slanted toward practical Peltier Effect applications.

These papers will be presented at the Dec. 1-3 ASRE Convention scheduled for New Orleans. Royal S. Buchanan, manager, Development Section, Westinghouse Electric Corp., Columbus, Ohio, is the Program Committee member responsible for organizing this session.

Si J. WILLIAMS,
Chairman ASRE National
Program Committee

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Report on Education

Another article in a series dealing with all levels of education and training in the air conditioning and refrigeration industry.

By Frank J. Versagi, Technical Editor

6. Manufacturers' Schools (Continued)

Manufacturers who feel more strongly about service schooling tend to have highly organized text materials; they often create their own which are separate and distinct from their regular service literature. The classrooms operate on a limited, but definite budget which allows the setting up of demonstrations, training aids, and bits and pieces for students to work on.

The complaint heard most from students of both good and weak manufacturers' schools was a resentment against the manufacturer's attempt to throw "sales" into service training. In fact, some so-called service schools are nothing but sales schools under a veneer of service training.

To avoid this resentment (and therefore ineffectiveness) some manufacturers hold separate courses on sales, business management, and service.

The primary purpose of manufacturers' service schools, of course, is to teach servicing of the manufacturer's equipment specifically. While some hold that this narrow purpose reduces the effectiveness of such schools for the continuing education of which we have spoken, others point out that when schools are properly set up, the principles learned in any one school are valid everywhere.

Most Review Theory

As a matter of fact, most schools begin with at least a brief review of refrigeration theory; some touch upon electrical fundamentals; air handling is covered where comfort cooling is the subject. In principle, such general subjects can be applied beyond the manufacturer's specific equipment, but much of this depends on the instruction.

We will discuss the various teaching techniques in a later article, but an example of what we are speaking of is the explanation of controls. In one school, the function of controls may be described in a general way, showing how spring pressure, evaporator temperature, and suction pressure, for example, operate in the control. In another school, however, when controls are brought up, the operation of Brand X, used by the manufacturer, is discussed in detail.

While the principles are the same in other controls, this point is not made, and less experienced students come away

knowing which screw to turn on Brand X, but confused when Brand C doesn't have the same screw.

Diverse Backgrounds of Students Is Problem

Although we stated that manufacturers' schools are the one organized attempt to reach men already in the field, we have just seen one of the apparently unavoidable inconsistencies of their schools.

That is, their classes may be made up of men with quite different backgrounds. The teacher

has a difficult time finding the level at which he should aim his instruction when his class consists of heating people who have just worked on a couple add-on units, maintenance men from schools and colleges, old-time refrigeration servicemen, newer cooling servicemen who have had technical institute training and who are here just to learn about the manufacturer's latest equipment.

In fact, next to the complaint about sales being thrown into service courses, the major complaint is that 1) "they spent too much time reviewing what we already knew," and 2) "they started too high, using terms we never even heard about." Both these complaints from members of the same class.

During one advanced cooling course, a discussion of the ways of measuring superheat was in progress when one man asked, "What is superheat?" Surprised, the instructor asked how many were in the same boat, and found four others out of a class of 18 who did not know what superheat was—who actually were not familiar with the basic refrigeration cycle.

Because students are also the manufacturer's customers, it is difficult for the company to deny admission to a class because of inadequate background. At least one company, however, which offers a heating course, a basic cooling course, and an advanced cooling course, requires that students in the last class must have completed the first two or proven equivalent.

Knowing the general make-up of his class to be at a higher level, the instructor can aim at that level alone. It is not co-

incidental that this particular school was among the most effective and most praised by students that the News saw.

'Entrance Exams' Can Guide Instructor

Another approach to this problem is the use of an "entrance examination." The idea here is that, by looking over the papers, the teachers can get an idea of the level of training in their class and aim their teaching accordingly. While this does not create one level in the class, it at least tells the instructor who he is talking to.

Several manufacturers tried an advanced service school, then dropped it. The chief reason is that the school was found ineffective, since too much time had to be spent reviewing fundamentals because most of the students had been away from school too long.

(To Be Continued)

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It's tiny Wolverine Capilator—the plug-drawn capillary tube. Capilator was developed by Wolverine Tube expressly for the refrigeration and air conditioning industry. Because it is plug drawn, Capilator's inside diameters are mirror-smooth—are held to such close tolerances that the tube can be produced to customers' specified demands.

Capilator is produced to rigid specifications. Both ends are chamfered to assure non-restricted fluid flow and to contribute to better end connections. Before shipment, each length is washed, individually flow-tested and has its ends paper wrapped to insure absolute cleanliness.

Next time you require capillary tube, specify Wolverine Capilator. Remember, too, that Wolverine also produces finned (Wolverine Trufin®) and prime surface condenser tube as well as copper and aluminum commercial tube in straight lengths and coils. For complete information write for our new book "Wolverine Serves The Refrigeration Industry".

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'Hot Shot' Units Have New Control Package

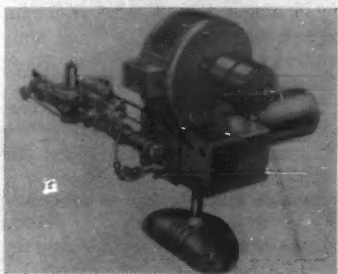
One of its lead lines of refrigeration equipment—"Hot Shot" automatic electric defrost units—are now being furnished with "feature-loaded" new type control package, it was announced by Drayer-Hanson, Div. of National-U. S. Radiator Corp., Dept. ACRN, 3301 Medford St., Los Angeles 63.

One control package (HSC D-25) consists of a time clock with delayed fan startup, thermostatic defrost termination, and fail safe tripper. Latter will terminate the defrost in case of thermostat failure. A pilot light is provided to indicate when defrost cycle is on.

Power relay is rated at 25 amps.; will handle two models, HS-1800 and HS-2470, on 3-phase power; and smaller models HS-465, 655, 955, and 1205 with single phase. The other control package (HSC-S-30) has contact rating of 30 amps., with no delay on the fan

startup or provision for thermostatic termination of the defrost cycle.

Bows Lower Priced Gas Burner Line



Lower price and increased capacity highlight the new 1959 line of power gas burners manufactured by Hastings Air Control, Inc., Dept. AC&RN, Omaha 5, Neb., the company announced.

The five new models in the expanded gas burner line are rated

from 70,000 to 700,000 B.t.u.h. The new series of burners is guaranteed by the manufacturer against backflash, pulsation, and pilot outage, even under adverse conditions, according to the announcement.

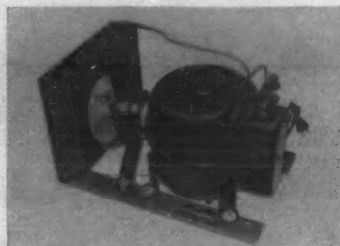
Other features: "Primary air adjustment for quiet, vibration-free operation; 'Positrol' air switch to delay opening of gas valve until blower comes up to speed; and plug-in type 100% safety shut-off in case of pilot flame failure."

Charging Manifold Has 3-Way Valve

A lightweight, flexible charging manifold for use with its packaged refrigerants has been introduced by Ansul Chemical Co., Dept. AC&RN, Marinette, Wis.

The new manifold features a three-way valve and coupling arrangement which permits the use of one, two, or three cans of packaged refrigerant.

Ansul's charging manifold is designed for use with virtually any type of canned refrigerant on the market, the company said, adding: "The serviceman can control the discharge of refrigerant by the three separate valves, saving the unused refrigerant cans for future use."

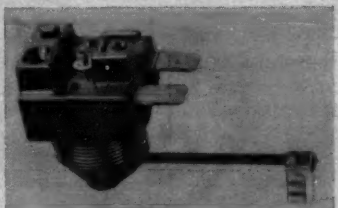


New Condensing Units For Low Temp Uses

Two new condensing unit models have been announced by the Evansville Div., Bendix-Westinghouse Automotive Air Brake Co., Dept. AC&RN, 950 E. Virginia St., Evansville 11, Ind.

They are R-12 low temperature units in 1/4 and 1/2-hp. sizes designed specifically for small freezer and other low temperature applications.

These compact units, designated as model OCL25 and OCL33, respectively, are constructed on rails to eliminate excess weight and provide equivalent counterparts to the present R-22 models for manufacturers who specify a preference for R-12, it was pointed out.

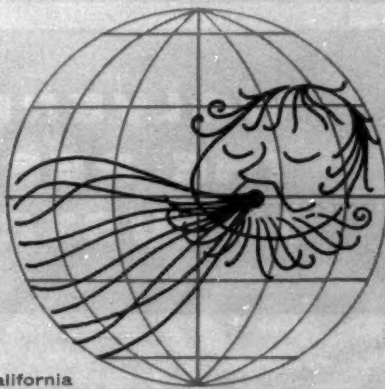


Engineering the temperature...

with a ONE PIECE, 233 TON Evaporative Condenser. Factory assembled and shipped as a unit, the compact DF-41A is only 93" high, 96" wide and 247" long.

RECOLD CORPORATION

7250 East Slauson Avenue, Los Angeles 22, California



Lower Cost Controls Offered by Spencer

Design simplification of current-type motor starting relays allows the production of a lower-cost series, the "Klixon 9660," for a wide range of voltage variations and special motor characteristics, according to Spencer Div., Metals & Controls Corp., Dept. AC&RN, Attleboro, Mass.

Models in the 9660 series are now commercially available in narrow differentials with stable pick-up and drop-out ratings from as little as 1.01 amp. maximum pick up (switch close)—0.86 amp. minimum drop out (switch open) to as much as 24.4 amp. maximum pick up—20.3 amp. minimum drop out, it was stated.



Ilg Introduces Units For Year-Round Use

A new line of cabinet-type air conditioning units for year-round use with chilled and hot water is being offered by Ilg Electric Ventilating Co., Dept. AC&RN, 2850 North Pulaski Rd., Chicago 41, Ill.

The line, called "ILG-dualair," offers an air volume range from 200 to 1,400 c.f.m., cooling capacity of 1 to 5 tons, and heating capacity from 25 to 100 m.b.h., the company said.

Non-recessed, semi-recessed, fully recessed, universal, and built-in models are available for wall, floor, or ceiling mounting. A full selection of intake and discharge locations has been provided. The units can be operated by pneumatic, electric, electronic, or manual controls.



OUTDOOR

FOR MORE INFORMATION ON THE PRODUCTS DESCRIBED ON THIS PAGE
Write Directly to the Company—at the Address Given in the News Item

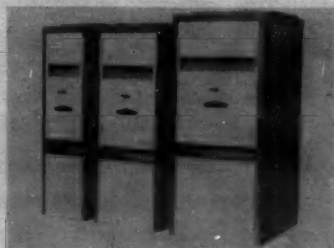


Bohn Offers Vinyl Finish on Units

A new vinyl finish called "Bohn-Kote" is now available for factory application to every part (except the motor) of Bohn model C cooling unit, according to the Betz Div. of Bohn Aluminum & Brass Corp., Dept. AC&RN, Danville, Ill.

This vinyl coating on casing, coil, fins, fan, and guard, prevents powdering of casing or parts in any corrosive condition such as in salt air or acid atmospheres present in salad reach-ins and other food service refrigeration applications, it was pointed out. Specifications for Bohn-Kote and its application to refrigeration evaporators were perfected by a state university in the midwest, the company said.

In addition to Bohn-Kote as an optional feature, the model C has rustproof fittings, a life-lubricated motor, and a grained aluminum cabinet. All screws are stainless steel. Model C is available in five sizes with capacities of 1,000, 1,300, 1,700, 2,300, and 3,000 B.t.u.h. at 10° T.D.



Majestic Heating Line Covers Wide Range

A new 1959 gas furnace line said to encompass dozens of different heating applications has been introduced by the Majestic Co., Inc., Dept. AC&RN, Huntington, Ind.

The new units are designed for maximum heating efficiency with natural or LP gas, and include downflow and upflow models, according to the company. A basement model is easily obtainable by the addition of a return air drop at either side of the upflow model, it was pointed out.

Each of the three styles of furnaces is being produced by Majestic in three cabinet sizes and five capacities ranging from 80,000 to 160,000 B.t.u.

"Featured in the new line are a heavy gauge heat exchanger developing up to 40,000 B.t.u. per section and made of prestressed steel to eliminate 'ticking' from expansion and contraction; a special track on which belt-driven blower assembly, including heavy gauge blower pan, can be removed for servicing; and a quiet, slotted-ported cast-iron burner," Majestic said.

"A distinct advantage of the line is that basement models as low as 57 in. in height are obtainable with B.t.u. ratings as high as 120,000; 60 in. height up to 160,000."

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zent, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 430 W. Fort, Detroit 26, Mich.

Only 25¢ each.



Duct and Insulation Are 1 Product

A new product has been introduced for residential duct systems—"Fiberglas" rigid insulation with a vapor barrier of thick embossed aluminum foil adhered with a flame resistant adhesive, it was announced by Owens-Corning Fiberglas Corp., Dept. AC&RN, Toledo 1.

The duct materials, manufactured in rectangular and round sizes, provide both the duct system and the insulation in one product,

it was pointed out by the manufacturer.

"Because the rectangular fibrous glass ducts are actually flat pre-scored insulation boards, ready for folding into duct sections they both deaden undesirable noise and permit high velocity of heating and cooling air," the company said. "The aluminum foil, bonded to the exterior of the ducts, serves both as a vapor barrier and as a tough exterior finish."

"Because these ducts absorb the noise created by vibrating metal installations, they remove one of the common objections to forced air heating and cooling. Another advantage is the low heat transfer coefficient of the material, which means that the distributed air remains at a nearly constant temperature while flowing through the ducts."

"Fiberglas ducts may be installed with a minimum of tools," it was stated. "A sharp knife, clips, tape, and a stapler are all that are required."

Dole Completes Tests on Over-the-Road System

Completion of development and field testing program on its new "Lektro-Cel" over-the-road refrigeration system has been announced by Dole Refrigerating Co. Dept. AC&RN, 5910 N. Pulaski Rd., Chicago 46, Ill.

Powered by a generator mounted on the truck engine, this system is said to offer many advantages in economy, dependability of operation, and simplicity in maintenance.

"This system has been developed with the idea in mind of utilizing the advantages of the hermetic condensing unit and the a.c. electric motor," it was explained.

"This is accomplished by use of the Dole Lektro-Cel generator mounted on the truck engine and supplying electric power not only to the condensing unit but also to other devices mounted on the truck utilizing a.c. current such as blower coil fans or even heaters



as are sometimes required to prevent milk from freezing in northern winters. Pumps on bulk milk pickup tankers can be supplied with power in a like manner.

"All units are suitable for night-time plug-in."

The Lektro-Cel is available in sizes up to 34,000 B.t.u.h. at high temperature and in types suitable for every application. It can be supplied with a blower coil for high, medium, or low temperature applications.

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EVAPORATIVE CONDENSERS (Part 2—Selection and Installation)

Some years ago Baltimore Aircoil Co., Inc. prepared a manual on evaporative condensers, covering all phases of the subject from theory of operation to installation and service practices, and most of it was published in the NEWS. Recently the manual was brought up to date by John Engalitcheff, president, and Thomas F. Facius, research engineer of Baltimore Aircoil Co., and the NEWS again publishes the major parts of the manual as a service to its readers.

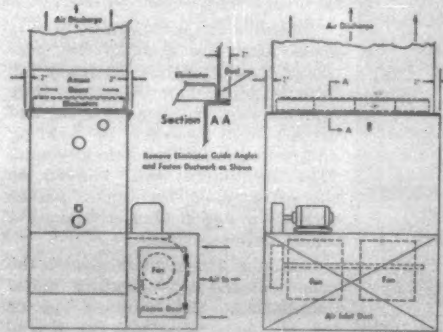
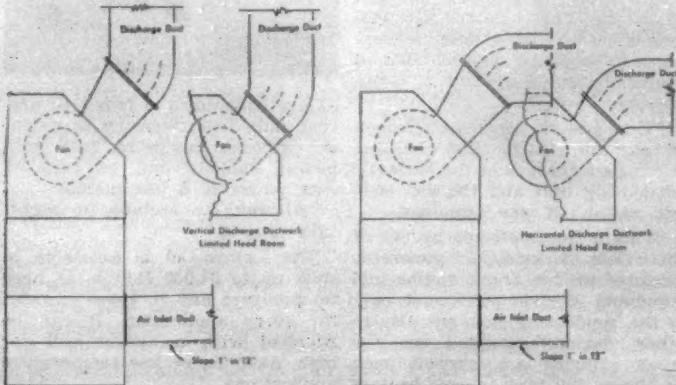


FIG. 7—Schematic diagram indicating recommended duct connections on B.A.C. "blow-through" evaporative condensers.

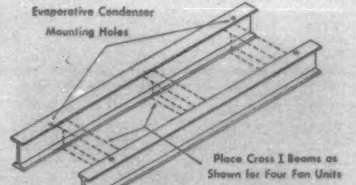


FIG. 8—Suggested "I" beam framework for supporting B.A.C. evaporative condensers.

Ductwork Connections

In the "Draw-Through" Evaporative Condensers, a "Y" type, or "pants" type transition to the main discharge duct is recommended. When inlet ductwork is required on the "Draw-Through" units the duct should be pitched to the unit approximately 1 in. in

12 in. of length to allow drainage of any water splash. On some indoor installations, the roof or ceiling may not be high enough to allow the standard fan extensions on the "Draw-Through" evaporative condenser. In this case, it is recommended that the fan extensions be shortened, and connected to the ductwork as shown in Fig. 6.

To install discharge air ductwork on B.A.C. "Blow-Through" evaporative condensers, the eliminator guide angles should be removed. See Fig. 7. When inlet ductwork is required on the "Blow-Through" units, the entire fan section should be enclosed as shown. Access doors in the ductwork should be provided for maintenance.

Supporting Steel

The suggested supporting steel arrangement for B.A.C. Evaporative Condensers is shown in Fig. 8. The "I" beams should be selected in accordance with accepted structural design practice, taking into account the operating weight of the condenser as listed in the bulletins. On B.A.C. four-fan Evaporative Condensers, place cross "I" beams as shown. (To Be Continued)

Charles P. Wood, Sr. Dies of Heart Attack

CINCINNATI — Charles P. Wood, Sr., 76, president of C. P. Wood Co., industrial refrigeration firm here, died at Jewish hospital of a heart attack.

Associated with the refrigeration business for 50 years he founded his firm 15 years ago.

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"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

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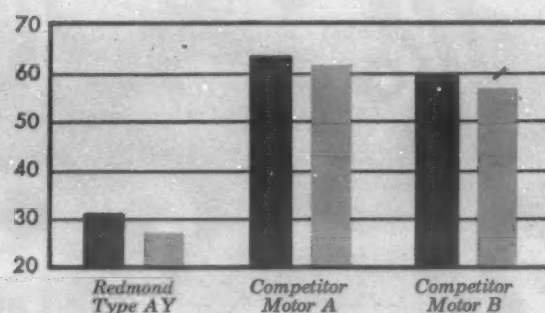


Place a mechanic's stethoscope on the end cap and you can easily hear the difference between the newly designed Redmond Type AY and motors of conventional design. Try it on a Redmond 1/6 hp—the noise level is about that of a 1/35 hp motor of conventional design.

Apply vibration tests and you will be quick to agree that here is the quietest direct-drive blower motor available. The AY Tri-Flux motor is designed and manufactured in every way to give years of trouble-free service and whisper-quiet operation. The positive oil system provides force-feed lubrication. Recirculating the oil assures maximum bearing life.

The graph shows vibration test results on the new Redmond design and two competitive motors. These tests were made with the best vibration testing equipment available. The solid black bar shows vibration on the motor end cap; the gray bar shows vibration on the blower housing. The graph is decibel readings on 120 cycles, since the 120 cycle frequency is the one that is the basic source of nearly all noise problems. Reduction of vibration is a logarithmic function—the reduction of vibration in the Redmond motor to 33 decibels reduces noise to only 1/5th that of conventional motors.

The new AY is ideal for a wide variety of applications requiring a whisper-quiet, economical, high-quality motor. Contact us at Owosso, Michigan, and we will have the Redmond sales engineer in your district call you at once.



The Standard of Dependability
Redmond
 COMPANY, Inc.
 Subsidiary of CONTROLS COMPANY OF AMERICA
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 THE BIG NAME IN SMALL MOTORS

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100% EXTRUDED NEOPRENE in sanitary gray for all STAINLESS STEEL and PORCELAIN REACH-IN REFRIGERATORS

TEMPRENE Eliminates removal of Back Pan. No Screws to remove or loosen. See your refrigeration jobber.

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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

What About Additives?

Have you an opinion on the benefits or harm of adding anti-freeze compounds, leak detectors, liquid dehydrants to the refrigerant stream?

If you haven't, you're in the minority. Most people have strong opinions, one way or the other. And, what are the facts?

Facts are pretty hard to come by. Even those with strong opinions become reluctant witnesses when there's a chance they may be quoted—even anonymously. People with definite in-plant practices would rather not be cited as examples on either side.

Take a simple thing like the addition of alcohol to a condensing unit which is to be used on a freezer. In this case, the alcohol is not behaving as a desiccant; that is, it does not remove moisture from the system. Rather, it behaves exactly as the anti-freeze in your car; it lowers the freezing point of any free moisture to a safe level for the particular unit.

Several companies add 1-2% alcohol, by weight, to all their freezer production even after all precautions have been taken to dry and evacuate parts of their condensing units. At least one of these companies has run tests which show that some degree of copper-plating and other indications of chemical reaction take place when any amount of alcohol is present in a system.

On a practical basis, however, the feeling is that the 1-2% additions are not such as would cause major problems, unless something else were already wrong with the system.

This same reasoning applies to the use of alcohol in systems containing aluminum. While a definite reaction can take place between these two substances, the magnitude of the reaction under practical conditions is such that users of alcohol feel justified in ignoring it.

Quite violent objection comes from those who have observed major damage to units containing alcohol, and who feel that "all other things were equal," so

the alcohol must have caused the difficulty.

One objection which is brought against the use of alcohol is that the thermodynamic properties like pressure-temperature relationship of an alcohol-refrigerant mixture are different than those of the refrigerant alone. While this is theoretically true, and would be significant if practical refrigeration units were operating at theoretical efficiency, normal conditions are such that any difference in thermodynamic properties is meaningless.

A major chemical company which has studied the effect of

alcohol in refrigerating units agrees that there is always some reaction when any alcohol is present, but feels that the 2% limit is a safe one.

"Above 5%," one source states, "alcohol is definitely harmful. However, very little work has been done between 2 and 5%, so we don't know about this intermediate zone."

It is reported that some companies play both ways against the middle by using alcohol and installing a drier. This is pretty strong, however, that alcohol will be adsorbed by common desiccants, and it will be removed from the refrigerant stream after a few passes through the drier.

More controversial than the addition of simple alcohol to a system is the addition of a chemical type "water destroyer." This material is claimed to act, not as a mere anti-freeze,

but as a true remover of water by chemically reacting with it and changing it to other substances.

Dire warnings have been given about use of such materials—chiefly based on reasoning that you don't want any chemical reactions going on inside a system. The counterargument again is based on the magnitude of the reaction, on how much material is actually involved.

There are now some three or four materials on the market designed for internal application. In total effect, they appear to be no major threat to conventional driers and desiccants, but the controversy goes on.

Unfortunately, neither the proponents nor opponents of internal desiccants have made available any verified data supporting their arguments.

So controversial and bitter is

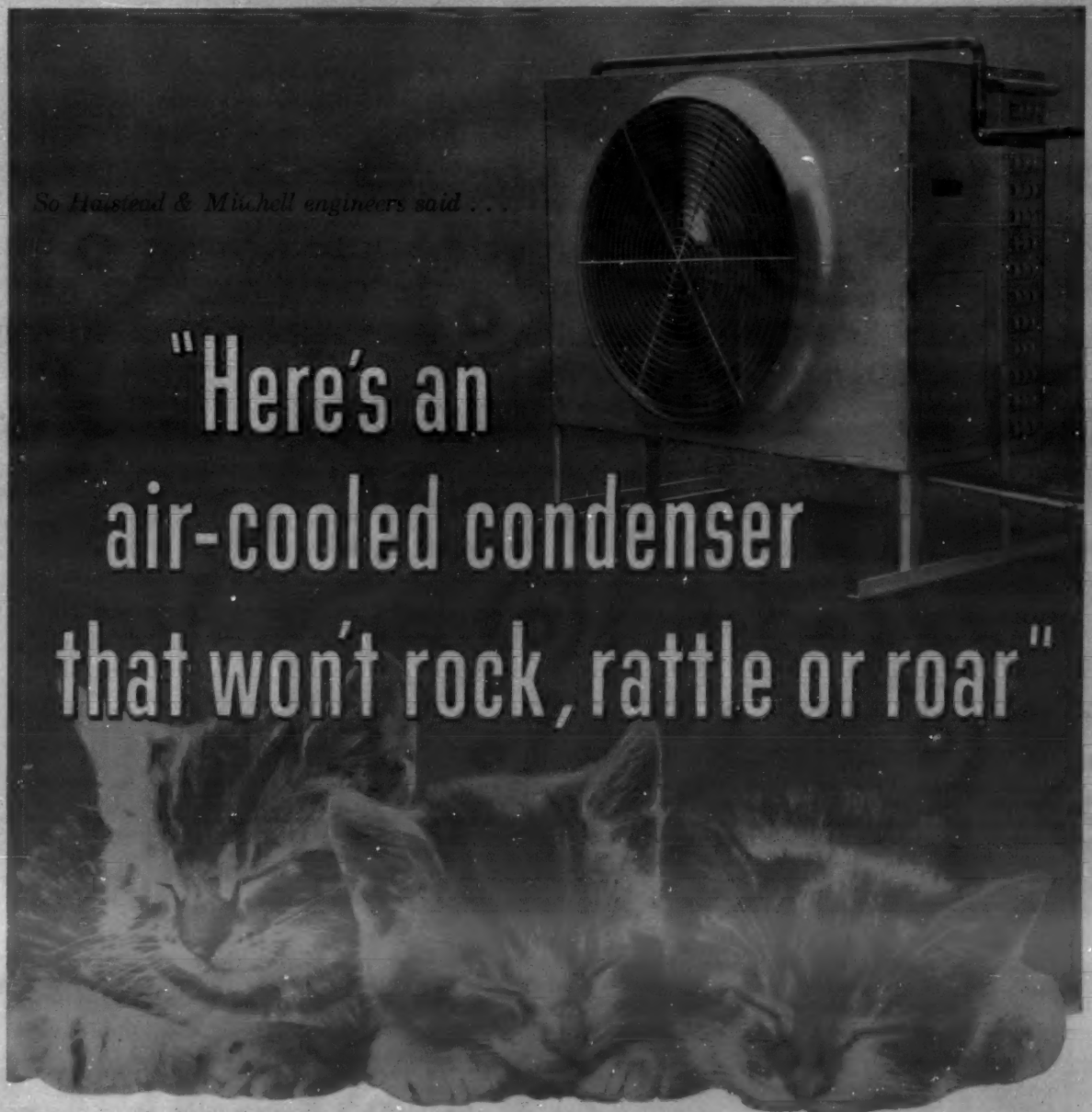
this entire phase of the refrigeration industry that a major government agency which investigated the general effect of one internal additive says, "we believe a published summary of our findings might invite substantial criticism and extended discussion for which there would be no conclusive replies."

In aggregate, the knowledge on the general subject of internal additives is probably quite extensive. However, with each company and group withholding information because it may be controversial, there is no authoritative bank or source of data.

There is not the slightest doubt that pooling and mutual exchange of information would push the composite knowledge of the industry ahead several years in this small, but important phase of refrigeration technology.

So Halstead & Mitchell engineers said . . .

"Here's an
air-cooled condenser
that won't rock, rattle or roar"



They planned it that way. H&M Air-Cooled Condensers had to be free of the vibrations, rattles and fan noise that plagued so many competitive models. And comments from contractors and users prove they hit their target.

The extra rugged casing won't loosen with use. Lock-tight construction avoids annoying rattles. Four-bladed, deep pitch fans are driven at slow speed for really quiet operation.

Halstead & Mitchell condensers are dependable, too. Large coil and exclusive Turbu-Flo design add more surface, improve heat transfer by up to 15%. Wide fin spacing prevents condenser clogging by dirt or other air-borne particles.

Designed for use with Refrigerants 12 or 22, H&M Air-Cooled Condensers are available in twelve mod-

els, from 3 to 50 tons capacity. Floor or ceiling mountings. Multiple circuiting for specified requirements, at no extra cost. Centrifugal Fan models are available for inside installations requiring ductwork.

Ask for H&M Air-Cooled Condensers at your distributors, or write for literature. Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.



Air-Cooled Condensers • Cooling Towers • Water-Cooled Condensers • Finned Coils

Alco Develops Valve For Nuclear Reactor

ST. LOUIS—At the request of General Electric Co., Alco Valve Co. here has designed a solenoid valve to over-ride the pneumatic controls of a nuclear reactor being developed for aircraft propulsion, the local firm announced.

"Service requirements dictate extreme reliability under high ambient temperatures, coupled with small size, light weight, and compact design," the announcement said.

"The valve has already passed severe life tests in subatmospheric temperatures of 500° F., as well as, military specifications requirements. It is adaptable to all applications requiring resistance to high temperatures and, although presently designed as a control for air, it can be adapted to liquids and gases."

What's Going On in Commercial Refrigeration

News of Markets, Products, Methods

'Selling Profitably Today' Will Be Theme of NCRSA Convention In Miami Beach Nov. 17-19

PHILADELPHIA — Complete program for the 12th annual convention of the National Commercial Refrigerator Sales Association has been released by Dudley Cawthon, convention chairman.

The convention will be held Nov. 17-19 in the Colony Room of the Golden Gate hotel, Miami Beach, Fla. "Selling Profitably Today" is its theme.

A round table cost-cutting

discussion, two manufacturer-distributor panel sessions, and seven addresses are scheduled.

All program sessions will be held in the mornings. Afternoons will be devoted to committee and directors' meetings and to social activities.

Complete program follows:

SUNDAY, NOV. 16

2 to 7 p.m.—Registration—Lobby.
2 p.m.—Meeting of board of directors.
7 p.m.—Early Birds' Cocktail Party.

MONDAY, NOV. 17

9:45 a.m.—Convention called to order by Harry A. Hattenbach, president, NCRSA.

Welcome to Miami—Richard Roberts, vice president, Florida Power & Light Co.

Introduction of Chairman of Opening Session—John H. Staples, Sr., Staples Market Equipment Co., Tampa, Fla.

"Future of the Distributor"—Harry A. Hattenbach, president, Hattenbach Co., Cleveland.

"Organize for Growth"—Milton I. Schwartz, executive vice president, S. & M. Schwartz & Co., New York City.

"Formula for Selling to Customers

Who Buy or Think There Is An Advantage In Buying Direct"—E. B. Ward, president, Baker-Ward, Inc., South Bend, Ind.

Panel Session: "The Marginal Sale—When to Accept And When to Reject."

H. E. Humphreys, president, H. E. Humphreys Co., Inc., Concord, N. H.

Harold B. Tidrick, division manager, Hussmann Refrigeration, Inc., Decatur, Ga.

G. Dwight Hilton, regional manager, Friedrich Refrigerators, Inc., San Antonio, Texas.

Question and answer period. Announcements.

TUESDAY, NOV. 18

9:45 a.m.—Meeting called to order by President Hattenbach.

"How NCRSA Works for You"—Marie H. Lawton, executive secretary, NCRSA.

10 a.m.—Round table conferences on best means of cutting costs and handling problems in:

A. Delivery, Installation, and Serv-

B. Hiring, Training, Compensating, and Directing Salesmen.

C. Engineering and Store Planning.

D. Diversification of Lines.

Reports of group chairmen on ideas and conclusions reached.

Question and answer period.

Announcements.

Adjournment.

2 p.m.—Meeting Joint Relations Committee.

7 p.m.—Hawaiian Luau—music and entertainment.

WEDNESDAY, NOV. 19

9:45 a.m.—Meeting called to order by President Hattenbach.

Introduction of chairman of closing session—Dudley M. Cawthon, president, Dudley Cawthon, Inc., Miami, Fla.

Report on activities of Joint Relations Committee—George F. Wiedemer, president, Cable-Wiedemer, Inc., Rochester, N. Y.

"Making Your Capital Work for You to the Best Advantage"—Wilbur S. Hoyt, owner, Hoyt Refrigeration, Inc., Lecompte, La.

"Creating and Selling New Customers on Complete New Stores"—Donald D. Denny, president, Modern Market Fixtures, Inc., Dayton.

"The Role of Air Conditioning in the Modern Supermarket"—D. V. Petrone, president, Typhoon Air Conditioning Co., Div. of Hupp Corp., Brooklyn.

"I Bought Direct—Now I Buy from a Distributor Because"—Bernard Stevens, president, Stevens Markets, Inc., Miami, Fla.

Panel Session: "Keeping Salesmen Informed and Inspired."

G. N. Eskra, executive vice president, Ray Winther Co., San Francisco.

Hugh E. Cooper, general sales manager, McCray Refrigerator Co., Inc., Kendallville, Ind.

Ray L. Greene, manager, Tyler Refrigeration Corp., Niles, Mich.

Report of Nominating Committee. Election of officers and directors.

New business.

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METAL STANDARDS: Electrolytic plated—double slotted for staggered arrangement of shelves—provides 5" spacing between shelves.

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Joe B. Chapman, Sales Manager

Supermarket Installs Vendors In Parking Lot

MUNDELEIN, Ill. — Four refrigerated vending machines to merchandise high turn over staples have been installed in the parking lot of Tony's Mid-west Super Market here.

The Vari-Vend machines, costing \$2,000 apiece, were added to the three automatic milk vendors that have been operating there for the past year.

The multi-selector units will handle butter, eggs, soft drinks, lunch meats, and other items.

Your Customers' Best Buy...

(and yours, too!)

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PRODUCTS

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OUTSTANDING SECTIONAL METAL WALK-IN COOLERS

IDEAL

COOLER CORPORATION

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ST. LOUIS 8, MO.

National Chain of 1,000 Superette Markets Planned

62% of SMI Markets Completely Self Serve

CHICAGO—A national chain of 2,400-sq. ft. drive-in superette food markets may be forged by a new company, Convenient Food Mart, Inc. here.

Organized by two dairies and a food wholesaler here, the firm expects to sell 1,000 franchises to independent operators around the country. The stores, to be located on main thoroughfares in cities and suburban areas, are expected to stay open seven days a week and until midnight each day to catch business the big supers miss.

First unit, according to the company, will be built in Skokie, Ill., a Chicago suburb. Two hundred other stores are expected to be opened in the Chicago metropolitan area.

Convenient Food Mart, Inc. plans to furnish everything for the store. Franchise holder will put up \$19,000 and pay the company 2% of annual gross sales. His only responsibilities will be stocking and selling.

Backing the project are Bresler Ice Cream Co., Meadowmoor Dairies, and H. S. Davies, Inc.

NCRSA Adds 7 Members

PHILADELPHIA — Seven new members have been added to the rolls of the National Commercial Refrigerator Sales Association in recent weeks, Marie H. Lawton, executive secretary, has announced.

They are Deal-Warren Refrigerator Co., Jacksonville, Fla.; Duston Market Equipment, San Diego, Calif.; Goad Equipment Co., Evansville, Ind.; Main-Ford General Supply Co., Inc., Rochester, N. Y.; Phoenix Market Equipment Co., Phoenix, Ariz.; S. E. Teaff Refrigeration, Houston, Texas; and Tucson Market Equipment Co., Tucson, Ariz.

Hussmann Reports Record Sales for Third Quarter

ST. LOUIS—Record sales of \$10,768,203 for the July to September quarter of 1958 and of \$26,081,982 for the first nine months of this year were reported recently by Hussmann Refrigerator Co. here.

These figures compared with \$8,368,845 and \$23,892,306 for the like periods of 1957.

"Demand for equipment such as Hussmann manufactures is very strong and a high rate of operations appears probable for the period ahead," W. B. McMillan, president, told stockholders.

Net earnings for the third quarter rose to \$830,234 from \$564,975 for the same 1957 period. Earnings for the first nine months, however, were \$1,633,774 as compared with \$1,716,755 last year.

"The improved percentages of net earnings to sales for the quarter is due to increased volume and the effects of our cost reduction programs, as there has been no improvement in selling prices," McMillan said.

CHICAGO—Some 62% of the three out of every four super-markets represented by the Super Market Institute are completely self-service in all four major departments — grocery, meat, produce, and dairy, a report of the institute declares.

In a survey of members conducted early this year, it found that in every region except the east north central, middle Atlantic, and Canada, better than

SMI defines a supermarket as one doing more than \$1 million a year volume.

The great majority of meat departments — 87% — are now fully self-service, and another 10% have partial self-service, the report said. Ten years ago, only 13% were completely self-service.

Two thirds of the produce departments are completely self-service with virtually all of the remainder semi-self-service.

Only 3% of the meat departments and 1% of the produce departments are still operated on a completely service basis.

Ten years ago only 7% of supermarkets were completely self-service in all four major departments.

Canadian Firm Will Freeze Chip Steaks

TORONTO, Ont., Can.—Tasty Chip Steak Products, Ltd. has been organized here with head office and processing facilities located in the Public Cold Storage plant.

Two coolers have been equipped with plate freezers for rapid freezing at low temperatures. The company will process and package frozen chip steaks.



HUSSMANN RECOMMENDATIONS

Experience has proved you can install and service Hussmann equipment easier, faster and more successfully . . . if you read and follow Hussmann recommendations to the letter.

This procedure assures your customer maximum satisfaction . . . with minimum operating costs all along the line.

That's why Hussmann service and installation instructions should be on your "required reading" list!

One more thing! If you run into a problem and need assistance . . . get in touch with our local representative or our factory in St. Louis.

We welcome the opportunity to help you and your customers.



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Jarrow Gaskets, to your exact specifications, are available in all these materials or combinations:

Jarone-B—the new, tough, flexible vinyl plastic extrusion that can't crack, check, or oxidize—grease resistant—long wearing—easily cleaned!

Rubber—in any extruded form—as a rubberized fabric—or sponge rubber, which is ideal as a combination with either plastics, rubber extrusions or fabrics.

Others include Neoprene Fabric and Waterproof Cotton Webbing.

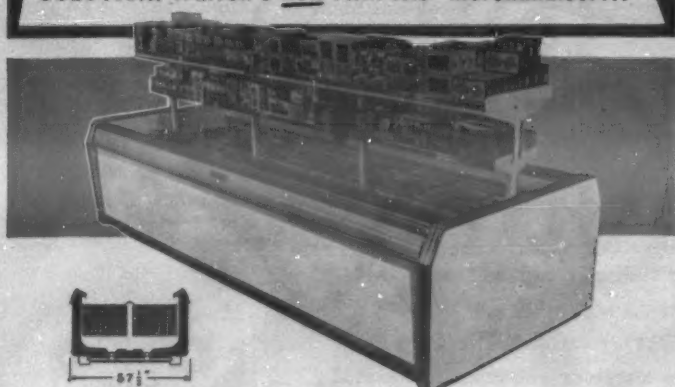


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ONE REFRIGERATOR WITH THE VARIETY OF TWO!
PROBLEM: Greater variety and adequate capacity
SOLUTION: Warren's new *Twin-Isle** Merchandiser...



Warren's *TWIN-ISLE* is a revolutionary new merchandiser for displaying ice cream and frozen foods: one refrigerator offering two-side shopping from two compartments, each with five frozen-food packs across; 57½" wide over-all. Better merchandising, with twice the variety of a conventional low-temperature display case! What a liberal capacity, too! 2,316 frozen-food packs or 2,160 pints of ice cream. Most economical possible use of floor space and horsepower! No further need for expensive back-to-back case line-ups.

TWIN-ISLE Merchandisers feature Diamond Jubilee styling . . . **COLORAMICS®** Bands optional at no extra cost. **Four-shelf merchandising canopies** are offered for further utilization of floor space.

*Patent Pending

Warren Refrigerators

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Mechanical Refrigeration Praised

Old Timers Hail Dairy Industry Milestones

WASHINGTON, D. C.—The spread of commercial pasteurization; bulk milk tanks; retail fluid milk containers; homogenization; motorized delivery vehicles; and mechanical refrigeration.

These are the six most significant developments which have occurred within the dairy industries in this "dairy century," according to the industries' collective "voice of experience," the Dairy Industries Old Timers Club.

The 3,000 club members—all of them dairy industry veterans of at least 25 years' standing, more than 100 of them with dairy industry careers spanning 60 or more years—recently were asked in a survey questionnaire to name five major "milestones" of dairy industry development which have come about in their own lifetimes.

NEAR-TIE BETWEEN MOTORIZED VEHICLES, MECHANICAL REFRIGERATION

Nearly 300 replies received as of a recent date have been tabulated by Dairy Industries Supply Association, keeper of the informal club's records, which reports a near tie between "motorized vehicles" and "mechanical refrigeration," resulted in the listing of a sixth milestone.

Pasteurization, including the more recent refinement of high temperature short time pasteurization, was nominated as a major milestone by 50.4% of Old Timers who responded.

The Old Timers proved their responsiveness to significant new industry trends by naming second most frequently a milestone which has achieved widespread adoption only in the current decade—farm bulk tanks. Bulk handling of milk, 34.1% of them indicated, immeasurably improves the quality of raw milk supplies, and aids both producer and processor in achieving efficiency and economy of operation.

PACKAGING ADVANCES CITED BY MANY

Thirty-two per cent identified advances in the packaging of milk as a dairy industry milestone. Nearly 25% (24.8) nominated homogenization of milk.

In tabulating returns to discover the fifth milestone, according to DISA, so close a division of opinion among the Old Timers was disclosed that it was decided to accept two choices: motorized delivery, listed by 14.3%, and mechanical refrigeration, which received 13.6% of the "votes."

Old Timers were lavish in

their praise of mechanical refrigeration — "this invaluable labor-saver and product quality-booster." One Old Timer summed up the prevailing attitude toward this development clearly and forcefully when he wrote

simply, "Ice and salt were killing us!" Old Timers Club members meet informally once every two years during the DISA-sponsored biennial Dairy Industries Expositions.

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Walk-in that
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Construction Methods



Over 60 years of experience has gone into developing new construction methods that result in savings on list price. Some of the custom features include: button nail design . . . expandables in 26" multiples . . . full 3½" fiber glass insulation . . . ¾" kiln dried fir . . . new sectional locking devices . . . clamp nail frame construction. . .

WRITE TO—A. H. BROMANN JR. INC.—Schiller Park, Illinois

Local ASRE and ASHAE Groups Debate Merger Proposal

New York, Newark Chapters Discuss Industry And Individual Advantages, Disadvantages

NEWARK, N. J.—The pros and cons of the proposed merger of the ASHAE and ASRE got a thorough airing at an October joint meeting of the New York City and Newark sections of the ASRE here, with the merger being the sole topic of discussion.

Two members speaking for the proposal concentrated their attention on the anticipated benefits in the merger for the professional society as a whole, and for the individual members. The two who spoke against the merger based their argument on "what's the need for it" and their fears that it would submerge the interests of some sections of the refrigeration field.

Following the presentations by the speakers, questions were directed at them from the floor, and there was open discussion by the members of the two sections. The presence of Cecil Boling, president, Dunham-Bush, Inc., and national president of ASRE, added interest to the meeting. Boling did not take part in the floor discussion, but wound up the meeting answering some of the questions that had been raised in the discussion.

Probable Benefits Cited

Ray Meyer, Worthington Corp. engineer speaking for the merger, saw some of the probable benefits as being:

Publications—A general upgrading of the society's technical journal, with "more emphasis on air conditioning in the technical as well as the feature articles," and more published information generally, such as in transactions, and published reports of research results.

Research—ASRE has very limited funds for research, mostly from small grants by manufacturers and from government agencies. ASHAE has a substantial research budget, and the combined facilities should be able to step up research activities with resulting benefits to individual members.

Local Meetings—With the present setup of separate societies, it is often difficult to get a respectable attendance at a local meeting, and also to find a sufficient number of good speakers. These problems would be minimized if the groups were merged.

Business Relations—With the fields of heating and refrigeration drawing together because of the mutual interest in air conditioning, some friction and bad practices have inevitably resulted. With the merger, there is the possibility that the two groups will get better acquainted, and that the heating people will get the right kind of "education" on cooling.

Standards—A merger should accelerate the standards program, a matter of vital concern because standards are now lagging too far behind current market conditions.

Membership Costs and Protection of Minority Interests—The committee on cooperation

for the merger has given assurances that there will be no increase in individual membership costs. The merger plan also sets up three divisions (heating, air conditioning, and refrigeration) and provides a plan to take care of the interests of each group.

Wants To Keep ASRE as It Stands Today

First speaker against the proposed merger was Jay Levins, air conditioning and refrigeration parts and supplies wholesaler from Avon, N. J., who declared that he was not "so much anti merger, as I am pro the continuation of ASRE as a

refrigerating engineering society."

The ASRE as it stands today, Levins said, "is doing a good job, has no financial problems, and has a specially defined purpose."

This purpose, which he said came out of the ASRE charter or constitution, is "to acquire and perpetuate the knowledge required by refrigerating engineers." Another way to say this, he declared, is to say that the over-all functional interest of those who are members of the society is in the "lowering of temperatures."

Levins then asked a number of questions about the merger, some of which he answered himself:

Why are the heating industry people interested in the merger?

Will they dominate the refrigeration field? Will they promote the field of refrigerating engineering?

How much mutual interest is there between the heating and cooling fields? (Levin said that in wet systems there was relatively little, and while there was more in the warm air side, there was not much interest in how or why a cooling system works—but merely in that it provides an added sale possibility.)

Will the good committee work now being done in ASRE fall by the wayside?

Would not the refrigerating engineering group within the merged organization have to be on the alert constantly to get its share of attention?

"Those favoring the merger,"

Levins averred, "anticipate" that many favorable things will happen if it goes through, but what kind of assurances can they give that such things will happen?"

Speaking next for the merger was Ben Blazer, who has been both a manufacturer and a wholesaler, and who is a member of both ASRE and ASHAE. As Blazer sees it, the merger proposal should be weighed on the basis of its probable benefits to the individual member, and on this score he thinks the evidence is heavily in favor of the merger.

Blazer also had his interpretation of the avowed purpose of ASRE, which he said is "to improve the art." He also averred that from a functional

(Continued on next page)

You'll be glad you read this message on the new Ross-Temp Ice Flaking Machine

The Ross-Temp Ice Flaking Machine is decidedly different from any other competitive unit—it is definitely built to protect a dealer's profit.

It was designed by a practical refrigerating engineer who sold other makes of ice flaking machines but who saw his profits eaten up in service calls. He designed the Ross-Temp to eliminate this problem and to assure greater customer satisfaction. That's why a Ross-Temp costs less to buy, less to operate and less to service. Simple controls, similar to those used on home refrigerators and freezers, and familiar to all refrigeration service engineers, are employed instead of intricate controls. Ice, formed on a freezing head, is removed by a helix THAT HAS NO BEARINGS TO FREEZE UP. The Ross-Temp Ice Flaking Machine is unbelievably simple.

The capacity range, 125 to 500 pounds of flaked ice per day, is tuned to the large volume market of flaked ice users—drug stores, sandwich shops, ice cream parlors, restaurants, bars, hospitals, etc.

You Buy a ROSS-TEMP Ice Flaking Unit Only After It Has Been Demonstrated to You

Ross-Temp field representatives are equipped with portable ice flaking machines. After a representative has shown you how simply the unit is constructed, how easily it can be sold and how your profits will be protected, can you place your order. The Ross-Temp sales organization is being built on a solid foundation of satisfied dealers and users.



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Newark, N.Y. Groups Debate Merger--

(Concluded from preceding page) to show that ASHAE carries out more basic research, and that it offers more written technical and educational material, said the speaker.

Thus, with the "new common denominator of air conditioning, people in the refrigeration field, in addition to dealing with the removal of heat, are conscious of and need to know more about the addition of heat and about air movement."

Wider Exchange of Ideas Cited

A major benefit of the merger, as Blazer sees it, is the opportunity that would be presented at local meetings for the individual members in the air conditioning, heating, and refrigeration fields to get together and exchange ideas and discuss common problems.

As one who was originally in the refrigeration field, Blazer said that when his interest in air conditioning and heating grew, and he became a member of ASHAE, he was able to reap both commercial gain and personal satisfaction by helping heating men who had refrigeration problems. As an active member of both societies, the speaker pointed out, he came to realize the extent of the knowledge needed by each group of the other's arts.

Some ASRE members seem to be of the opinion that the ASHAE is "less technical" in its approach, and in its contributions as a professional society, said Blazer, but he doesn't think this is the case. It is easy

the interests of the many varied interests that can be found in the refrigeration field alone?"

The societies must be considered as "professional" groups with high standards and requirements for admission to membership, rather than as "trade" groups designed for the advancement of the business interests, Holske asserted.

Second speaker for the opposition was Clifford Holske, New York consulting engineer, and a past national president of ASRE. Declaring that he had not been given "any logical reason" for the merger, Holske then outlined what he considers to be valid reasons for ASRE remaining a separate entity.

Why Did ASRE Break From ASME?

"Why did ASRE break off from the American Society of Mechanical Engineers when it was founded?" Holske asked. "Because refrigeration was a very special field, and no one can deny that this is the age of specialization."

"It's impossible to specialize in such a broad and large field as air conditioning, heating, refrigeration, and ventilation. Granted that there are diverse groups even within the ASRE, but these are on a smaller scale, and the answer is to form more divisions within the ASRE."

"Why try to combine with another group and make it more difficult to forward and protect

the interests of the many varied interests that can be found in the refrigeration field alone?"

The societies must be considered as "professional" groups with high standards and requirements for admission to membership, rather than as "trade" groups designed for the advancement of the business interests, Holske asserted.

Is It Necessary To Merge In Order To Communicate?

"Is educating the people in the heating field your problem?" Holske asked. "Do you need to merge with their society in order to speak to them? If you want to get the benefits that ASHAE offers, why not join their society?"

Holske charged that while the present councils of both societies had drawn up appealing plans for future action following the merger, together with safeguards for the minority interests, that present councils "cannot guarantee" the action of future councils.

Stating that in his belief, *Refrigerating Engineering* is doing a good job as a journal of technical refrigeration information, Holske asked "will it do as good a job if it becomes a composite 'Reader's Digest' of plumbing, heating, air conditioning, and tin snipping?"

On the matter of research, Holske declared that "the ASHAE is spending more money on research than it can afford, and what has come out of it other than the Comfort Index Chart, which was developed several years ago, and which is no longer widely used."

ASRE research has taken the form of grants to needy students or research specialists doing work in pertinent fields, said Holske. In a merged society the individual member might have to contribute to research activity which serves commercial ends primarily, he declared. The former ASRE president also said it was his opinion that individual members' dues would be increased if the merger went through.

Some Points Raised From the Floor

In the rebuttals and floor discussion following the speakers' presentations, the following were some of the more significant points:

(For) How many of you, in your day-to-day activities, have some contact with air conditioning? (It appeared that about 90% of the audience raised their hands to signify that they did).

(Against) With the 1½ to 1 ratio of ASHAE to ASRE members on the present lists, isn't it logical to assume that the refrigerating engineer's interests will be submerged?

(For) ASHAE research activities have resulted in much more than the development of the Comfort Index Chart. Much of the advances in recent years leading to more widespread use of modern heating systems and air conditioning can be traced to such research.

(Against) How can we make our competitors perfect through a merger? Will they tell us their secrets?

(For) The character and interests of the professional engineer in the industry have changed markedly in the past few years. The great majority of the engineers have active interests in the air conditioning and heating fields as well as refrigeration, and want their professional society and its activities to reflect this condition. Among the consulting engineers, only a few specialize in refrigeration work only.

(Against) Out of a total membership of 18,000 in the two societies, the overlapping membership is not much more than 1,000, which doesn't indicate a great overlapping of interests.

(For) An ASRE member who is also a member of the American Chemical Society pointed out that the latter group has many diverse interests, and is operated on a divisional basis in a satisfactory manner.

(Against) Is the proposed \$250,000 research budget big enough for a competent job in either basic or specific research?

Buffalo ASRE Will Discuss Merger at Nov. 6 Meeting

BUFFALO—"To merge—or not to merge" is the topic for discussion at the Nov. 6 meeting of the Buffalo Section, ASRE, to be held at the Park Lane, here.

R. A. Baker, regional director for ASRE, and E. R. Queer, national president of the American Society of Heating and Air-Conditioning Engineers, will be guest speakers at the panel discussion, concerning the proposed merger between the ASRE and ASHAE.

The Western New York Chapter of ASHAE will be guests at this meeting.

Is it not likely that there will be extra levies on members to finance research activities?

(For) Program conflicts the past few years have demonstrated the community of interests. The merger should benefit local level meetings through increased attendance and better speakers.

(Against) One common denominator for practically all groups in the field is the electric motor. On that basis, wouldn't it seem more logical to become a part of the American Institute of Electrical Engineers?

Boling Answers Specific Questions

Boling concluded the meeting by answering some of the specific questions which had come up in the discussions as follows:

There will be no increase in dues. There seems to be no possible reason why the society formed from the merger couldn't operate in the black with a budget based on 15,000 members.

The anticipated yearly research budget if the merger goes through is \$388,000, which should be sufficient for some significant projects. Part of the money for research comes from the sponsorship of the International Air Conditioning Exposition.

The merger proposal is not the brainchild of any "splinter group" in ASRE. A study of the history of the proposal through its various stages shows that in 1956, the ASRE national council voted unanimously to set up a committee to investigate the merger; this year the council voted 27 to 4 to submit the proposal to a membership vote; and a recent informal poll of council members on the merger showed an overwhelming majority for it.

The master plan for the single society provides many different ways in which the interests of those primarily interested in refrigeration will be protected at local meetings. Among these are "double feature" programs, concurrent sessions on different subjects, and special "pre-meeting" sessions on some particular refrigeration subject.

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THREE SPOKE for, and three against the merger of ASRE and ASHAE on a panel at the September meeting of the San Francisco Section of the American Society of Refrigerating Engineers. Left to right: Fred Vann, Ed Long, Earl Carrier, affirmative speakers; former ASRE National President Edward Simons who was moderator for the panel, Bob Holland, Wally Hulse, and Lester Westling, negative speakers.

6-Man San Francisco Panel Digs Into Whys and Wherefores of Joining Forces

SAN FRANCISCO—"Whether doing heating, cooling, or air conditioning, you are all talking the same language," Earl Carrier told the September meeting of the San Francisco Section, American Society of Refrigerating Engineers.

Carrier was first affirmative speaker of a six-man panel on the proposed merger of ASRE and the American Society of Heating & Air-Conditioning Engineers.

"I belong to both societies," Carrier said. "It is hard to tell where one stops and the other starts. Everything we do we could do better together, and with more prestige."

Carrier pointed out the American Society of Mining Engineers has 12 divisions, the Civil Engineers with 40,700 members have 13 technical divisions, the Mechanical Engineers with 44,000 members have 21 technical divisions including such diverse fields as textiles, lubrication, and hydraulics; and the Chemical Engineers with 72,000 members have at least 21 operating divisions, each in a special field.

Lester Westling, against the merger as first negative speaker, said societies are like a family. He has been loyal to his ASRE family but something has happened to the promoters of the society.

Merger Might Result In New Refrigeration Group

We are currently experiencing a great sweep of air conditioning, Westling said, and the market is hungry for this equipment. At present the air conditioning tail is wagging the refrigeration dog.

If the merger is accomplished, Westling said, it may become an

invitation for a new society of refrigeration engineers.

Ed Long, affirmative, said business-wise the tonnage of refrigeration going in is for air conditioning, and whether we like it or not, plumbers and sheet metal shops are going to put it in.

Recently 75 new bank buildings have been constructed in California, each with 50 to 75 tons of refrigeration for air conditioning. These units are being put in by members of ASHAE, using package units sold by sheet metal contractors.

We are all talking about B.t.u.'s, Long said. When merged it is planned so we can have different division meetings for special interests.

Might Lead to Chapters In Smaller Cities

Most important, Long said, is that the merger will permit having chapters in smaller cities that cannot support two societies.

Bob Holland, speaking on the negative side, said he was nevertheless in favor of merger if that is actually what it is going to be but he would call it "submerging" instead.

Holland said ASRE members against the merger are a minority interested in low temperature fields. Refrigeration is a distinct field of engineering. There is a lot of tonnage in it figured at 4 or 5 hp. to the ton.

Air conditioning is packaged to such an extent an engineering society is not needed, Holland said. Chemical engineers are interested in heat exchange, use refrigeration cycles. All of the heat exchange societies might come together.

Fred Vann, affirmative, does not feel refrigeration men

will be lost but will be very much a part of the new society and with increased prestige.

Vann feels all ASRE members are interested in merger with a possible exception of 10%. He belongs to the Refrigeration Contractors Association

On page 30 will be found the story of a similar discussion of the merger at a Detroit ASRE and ASHAE meeting. A more comprehensive story of the pros and cons of the proposal as presented to the Joint New York and Newark chapters of the ASRE starts on page 27.

eration Contractors Association which has recently changed the name to Refrigeration & Air Conditioning Contractors Association.

Vann said merger would improve publications. Oftentimes he takes the magazine home to read and does not find things in which he is interested.

Every other year publication of the Data book is not necessary. Every four or five years is often enough. The Guide will keep engineers up to date.

'Regional Meetings Would Be Improved'

Regional meetings would be improved by the merger, Vann said. He has attended two national ASRE conventions but did not find every-day subjects of interest to him. He feels a merged society will be able to provide a program containing more of interest.

Wally Hulse, negative speaker, said the history of the origin of ASRE shows it was an offshoot of ASME in 1904 by a group of engineers who wanted to specialize.

When working as a heating manager a number of years ago,

Hulse said he trained 144 salesmen, then called heating engineers. These were men who stayed in heating and ventilating because of the simplicity of it, Hulse said.

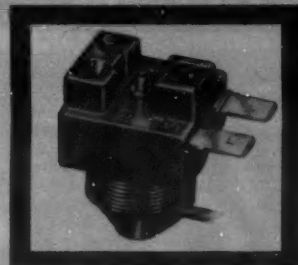
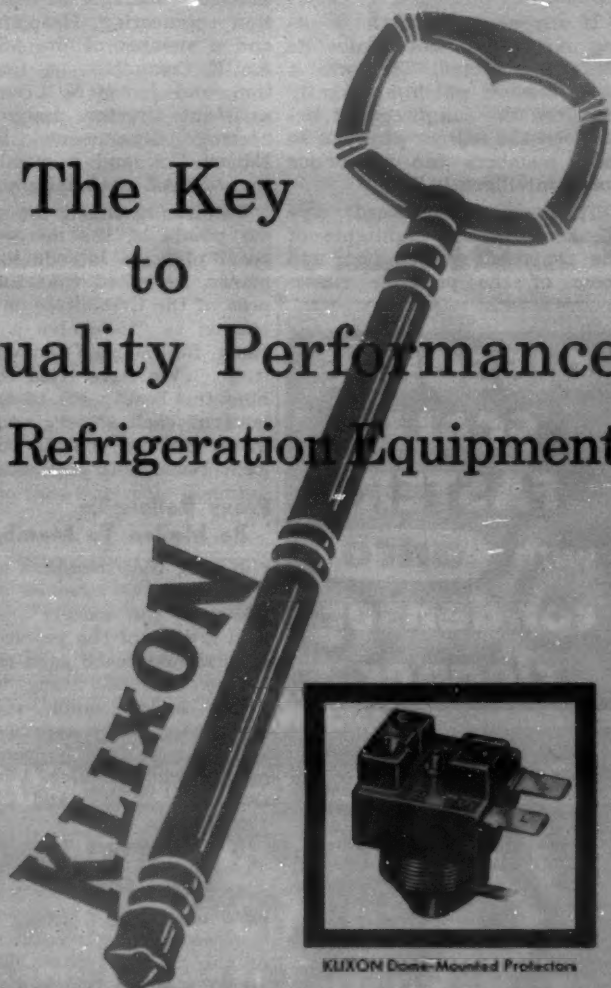
He read letters from top executives in the refrigeration industry. One letter was in favor of merger, said plans have gone so far there will be loss of prestige if merger fails to go through. Another letter asked: if we do not have the society working in the refriger-

ation field who's going to do it?

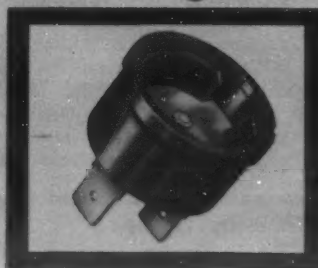
ASHAE represents membership, Hulse said, which is largely representatives and agents of air conditioning manufacturers.

Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzales—25¢ each. Mail this ad with your name and address to: Air Conditioning & Refrigeration News, 460 W. Fort St., Detroit 36, Mich.

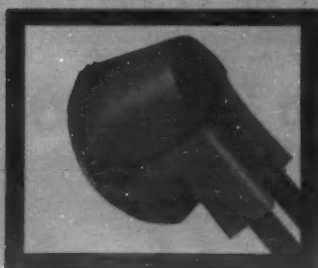
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Detroit ASHAE and ASRE Hold Quiet Discussion of Merger Proposal

DETROIT—Proposed merger of the American Society of Refrigerating Engineers and the American Society of Heating & Air-Conditioning Engineers was the subject of discussion at a joint meeting of the local ASRE and ASHAE groups held recently at the Rackham Memorial building.

If anyone came to the meeting expecting a hot debate, he was disappointed. This was a quiet session which apparently produced the enlightenment desired on the merger proposal so local members can "cast our votes intelligently."

The audience heard two speakers present highlights of the proposed merger plan and some of the probable conse-

quences of a merger. Both made it plain that they intended to maintain a neutral position in their presentations. These were followed by a question-and-answer period which was relatively brief and entirely calm throughout.

The speakers were F. L. Tarelton, manager of refrigeration engineering, Hotpoint Co., and a member of the ASHAE-ASRE Committee on Cooperation, and James N. Livermore, assistant director, design engineering department, Detroit Edison Co., and a member of the ASHAE national council.

Tarelton outlined the principal points of the merger proposal plan. In introductory remarks, he noted that the purpose of the Committee on Cooperation is "to evolve a sound basis for merger—not to sell it. . . . We have tried to combine the best parts of the by-laws of each society and have given serious consideration to each reasonable suggestion."

Proxy Ballots To Be Mailed To Members

Noting that members of both societies have received a summary of the merger plan, he said a copy of the proposed by-laws should reach each member before Oct. 30, along with a proxy ballot which may be mailed in if the member does not plan to vote in person at meetings set for Dec. 1 in New Orleans (ASRE) and Chicago (ASHAE).

If the merger is approved, Tarelton noted, it will require over 60 days for the merged society to become a legal corporation. Due to legal requirements of the State of New York, he added, it could take a month or two longer.

Tarelton then briefly discussed, with the help of charts, the organization, scope, and interests of the proposed new society, and also gave some details on its functional operation.

Proposed Bylaws Protect Minority Groups

Among other things, he pointed out that the proposed by-laws contain protective sections for minority groups and that in local areas there is provision for interest coverage, with each chapter having the option of selecting programs to meet its local needs.

Concluding, Tarelton showed charts listing merger advantages as presented in the March issue of *Refrigerating Engineering* by Hermann F. Spoehrer, then president of ASRE, and disadvantages or rebuttals as cited by some Chicago ASRE Section members in discussions and debates.

Advantages (as listed in the chart presentation): Reduction in headquarters operating costs (1 vs. 2); combined staffs can render better service; duplication of activities eliminated; savings to members due to fewer meetings; committees stronger and more effective due to lack of duplication.

Research can be greatly expanded; can expect better national programs; stronger local

chapters; chapters can be formed in smaller communities that now cannot support either ASRE or ASHAE separately; broader scope for individual members; society position in industry strengthened; publications improved with broader coverage.

Eliminate overlapping activities in air conditioning; codes and standards can be improved; greater prestige in relation to other societies; eliminate overlap in common interests in general field of thermal dynamics.

Disadvantages Cited

Listed disadvantages or rebuttals: Cost to individual members will not decrease; larger organization too impersonal, will render poorer service; too broad in scope for interest and participation of many members; savings to less than 6% of members (dual); committee efforts weakened by too broad coverage or excess committees.

Technical societies should encourage research in their areas of interest rather than perform it; broader coverage increases simultaneous presentations at national meetings, reducing interest and participation; weakens the larger chapters due to too broad and less concentrated coverage; weak chapters cannot handle wide interest programs satisfactorily.

Will dilute member interests too much; more divergent opinions on technical problems will result in less respect for society; less interest in publications due to excess interest coverage; will smother—not solve—overlapping air conditioning problems; agreement on codes and standards more difficult due to wider committee interests.

Will create new fringe areas with other societies; too big for important technically limited interests; national meetings too large for most chapters and cities; submerged minority groups will seek other affiliations.

Livermore then elaborated on some phases of the proposed merger plan and some of the expected results if the merger is approved. Among other things, he noted that the merger idea got started with chapter delegates. "So I'd say you asked for its consideration," he commented.

If Merger Is Okayed . . .

If the merger plan is okayed, Livermore said, "some things would be continued and some would be added." For one thing, he stated, the research program would be "tremendously expanded" and the size of the program would justify a larger research plant. The annual exposition would continue and improve, he said, and development of standards would be stepped up.

Regarding publications, he said it is planned that the ASRE Data Book and ASHAE Guide would continue to be published separately through 1961 and then, starting in 1962, there would be a joint publication.

During the open-discussion period, about a dozen questions or comments were directed to the speakers. They had to do with such matters as rebates of dues paid to the ASRE and the ASHAE if the societies are merged; local chapter operation

and when it would start; publications plans; and what percentage of dues would go for research.

One questioner wanted to know if local chapters would have the option of merging or not. Tarelton replied that this proposal had been dropped because local option could mean continuation of two societies.

Another questioner asked if two local groups could exist side by side under the merger proposal. Tarelton answered that, as noted in his presentation on the merger plan, if there are several interested groups, the chapter could elect a vice president for each of these groups and their programs could be combined or separate. One member of the audience

said he would like to see the Data Book published one year and the Guide the next. Tarelton commented that the publications committee of the merged society—if that comes about—would settle this matter on the basis of what the members desired.

To a question on local dues, Tarelton answered that chapters of a merged society would have the option of levying dues for local purposes.

Also from the audience—after a few more questions and answers—came a compliment for the speakers for an "excellent job" of "giving us the facts so we can make up our minds." And on what the moderator called "this nice note of harmony" the meeting ended.

Joint ASHAE-ASRE Meeting In Cincinnati Shows No Strong Feelings on 'Wedding'

CINCINNATI—If any strong sentiment one way or the other has developed over the proposed ASHAE-ASRE merger among members of either group in the Cincinnati area, it didn't come to light during a joint meeting of the local groups here late in September.

Possibly it was the setting and nature of the get-together. It was a "socializing" meeting held at a country club, and those present seemed more interested in the golf and door prizes being distributed, and in exchanging good natured banter, than in discussing the merger.

The local ASHAE chapter acted as host, and the meeting chairman first introduced the officers of both local groups. He then talked about the merger briefly, stating that "if you're an officer of a local chapter you're getting reams of documents about the merger proposal."

"Are we engaged?" inquired a voice from the audience.

"I guess you might say we're engaged all right," said the chairman, "but we won't be legally married unless the merg-

er is voted on favorably on Dec. 1."

The chairman said that the "merger proposal was something we all ought to be thinking about, and discussing," but there was apparently no inclination by those assembled to discuss it openly. So the chairman wound up the "discussion" by advising his fellow ASHAE members:

"Fraternalize with these ASRE fellows. Remember that they may soon be your brothers. And keep in mind that they are serious engineers, who enjoy serious technical discussions."

And with the session over, the meeting got down to the serious business of distributing the prizes.

Informal talks with individual members later revealed a generally favorable attitude towards the merger. Reasons advanced were the "more and more overlapping of interests," the "savings in time and money" that could be realized by those now finding it imperative to follow the activities of both societies; and the probability that "the combined bigger society can do more things."

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Women Air Views for NAHB--

(Concluded from Page 1, Col. 3) ing Contractors, and the Oil Heat Institute.

Nearly all the women expressed interest in air conditioning. Many, however, did not look on it as a necessity or even highly desirable. One woman from Kansas was dead set against it. It aggravated her allergies, she said.

HOW MUCH DOES IT COST?

Foremost question in the women's minds was "How much does it cost?" The answers they received from industry experts varied widely.

Many indicated that they would specify air conditioning in a new home if they could afford it. What they would be willing to pay for it, over and above the cost of the heating plant, varied from nothing to as much as for the heating plant.

One New Jersey housewife set a definite limit of \$1,000—preferably less than \$800—for a good system, but only if it permitted her to get other design features she wanted.

Given a list of items that might be added to their home—and assuming they had ample money to pay for them—only five women selected a \$900 central air conditioning system. Four of these were from the southwest. Delegates from this section admitted that air conditioning for them was a necessity, not a luxury.

NON-OWNERS SKEPTICAL

Most ladies wanted more information about air conditioning. Installed cost was their biggest question. After that, they were eager to learn more about what was required in construction features to prepare their house for air conditioning. Some sought substantiation of claimed benefits. Non-owners expressed skepticism of health, cleanliness, and comfort claims.

Advertising by air conditioning manufacturers is not specific enough, complained one.

Many women were indignant-

ly aware of the lack of selling on the part of the industry.

Two women from Texas, sitting at different tables, claimed dealers acted as though they were doing the prospect a favor to give her an estimate on air conditioning.

One professional woman from Ohio said she had to call a dealer three times before he would come out and install a window air conditioner for her.

A Chicago-area housewife said she has lived in a project of 350 homes "designed for air conditioning" for three years. Never once, she affirmed, has a salesman been out there to sell cooling.

"Why don't you people get on the ball?" she asked.

More detailed comment on what the women liked and disliked about air conditioning will appear in a later issue of the News.

Better Living--

(Concluded from Page 1, Col. 4)

Approximately half of the 100 delegates want central air conditioning in place of individual room units. This attitude follows logically from their desire for "more house"—more rooms and bigger rooms.

This is in contrast to the fact that at present only slightly more than one third of the delegates' homes are air conditioned and only one third of these now have a central system. And a small percentage wanted no air conditioning at all.

Warm air heating is now used in the homes of 68% of the delegates, hot water in 18%; steam in 4%; and radiant and other types in 10%.

Most delegates, 53%, use gas to heat their homes; 35% use oil. L.P. is utilized by 7%, coal by 3%, and electricity by 2%.

The goal of the delegates was obviously increased efficiency, in heating and air conditioning plants—a more satisfactory job of climate control as a factor in Better Living.

Plane Crash Injures Mich. Wire Cloth Pres.

DETROIT—Critically injured when the private seaplane in which he was a passenger crashed into Mt. Olivet Cemetery here, Arthur W. Bull, president of Michigan Wire Cloth Co., manufacturer of strainers and driers, recently underwent brain surgery at Grace hospital.

The crash occurred as the single-engine Seabee was coming in for a landing at City Airport Monday night, Oct. 20. Bull and two companions were returning from a pheasant hunting trip.

Early investigation indicated that the plane may have run out of gas.

Refrigeration Research Names Exclusive Agent

BRIGHTON, Mich.—Refrigeration Research here has announced the appointment of Automatic Equipment Co. of Detroit as exclusive agent for wholesaler items for Michigan, Ohio, and Indiana. G. Orr Sanders is president of the Detroit firm.

The Refrigeration Research wholesale line includes "Bull Dog Progressive" filter driers of both Silica Gel and Molecular Sieve types, a standard line of receivers, heat exchangers, mufflers, strainers, receiver-driers for automotive replacement, suction accumulators, and many other items.

A new wholesaler catalog is available on request.

Frigidaire Planning To Recall 350 Workers

DAYTON—Plans to recall 350 additional workers were announced recently by Frigidaire Div., General Motors Corp.

Since Aug. 1, some 1,300 workers have been put back on the job.

The latest recall will increase total employment in Dayton to around 14,850.

Carrier--

(Concluded from Page 1, Col. 2)

characteristics." "All of the models use voltage levels common or easily obtainable in multistory buildings and industrial plants," the announcement said. "Current inrush is the lowest of all others tested; a protection against dimming of lights, malfunction of computers or other electrically-powered business equipment, and heavily loaded power supply lines.

"Cooling the hermetic motor by passing refrigerant around and through the motor windings, plus special star-delta starter connections, safeguards the machine against frequent starting and heavy loads.

"It can be started a dozen times in as many minutes and the motor will still be within safe temperature limits," Hoffmann pointed out.

Indict 10--

(Concluded from Page 1, Col. 3) U. S. District Court of Northern Ohio.

Defendants are Commercial Electric Co., wholesale distributor of General Electric major appliances; S & K Appliances, Inc.; Gross Electric Fixture Co.; Woodville Appliances, Inc.; Lusk Furniture & Appliances, Inc.; Shea's, Inc.; Phillips Appliance & Air Conditioning; Superior Refrigeration Sales &

Service; Frank Rogers Furniture City, Inc. of suburban Maumee; and LaSalle & Koch, division of the Macy Co.

LaSalle & Koch and Shea's were named co-conspirators but not defendants in the civil suit. The civil complaint also named Edgar L. Bauerfield and Alban C. Clark, proprietors of two Toledo stores, as defendants.

The Justice Department charges that defendants conspired illegally to fix prices, boycott competing retailers, and generally suppress competition in Toledo in the sale of G-E major appliances.

Effect was to stabilize prices for G-E appliances in Toledo and eliminate price competition among dealers, the Justice Department said.

Westinghouse Meetings To Show 1959 Lines

COLUMBUS, Ohio—Westinghouse 1959 major appliances will be introduced to more than 5,000 distributor and retail personnel at a series of regional "road show" meetings starting Oct. 27 in Columbus.

John J. Anderson, manager of the Westinghouse major appliance division, said two traveling crews of Westinghouse executives and professional entertainers will conduct 15 two-day meetings in 13 cities announcing the new lines. New refrigerators, freezers, washers, dryers, and ranges will be introduced.



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The massive depth filter completely removes all scale, sludge, carbon and other particles as small as 100 microns. Molecular Sieves adsorb and retain large quantities of moisture even at refrigerant temperatures of 140°F, and keep moisture concentrations below 10 ppm. Acids are reduced far below dangerous corrosion limits.

Compact in size, the filter-driers are U/L Approved and may be used for Refrigerants 12 or 22, Carrene or methyl chloride. Working pressure is 500 psi; minimum bursting pressure, 2500 psi.

REPLACEABLE CARTRIDGE TYPE units use an "O" ring for a positive, leakproof flange seal. From 3 to 40 tons, with 3/8" thru 1 1/2" sweat connections.

SEALED TYPE filter-driers are available in 1 to 12 tons, with 1/4" thru 3/4" flare and 3/8" thru 1/2" sweat connections.

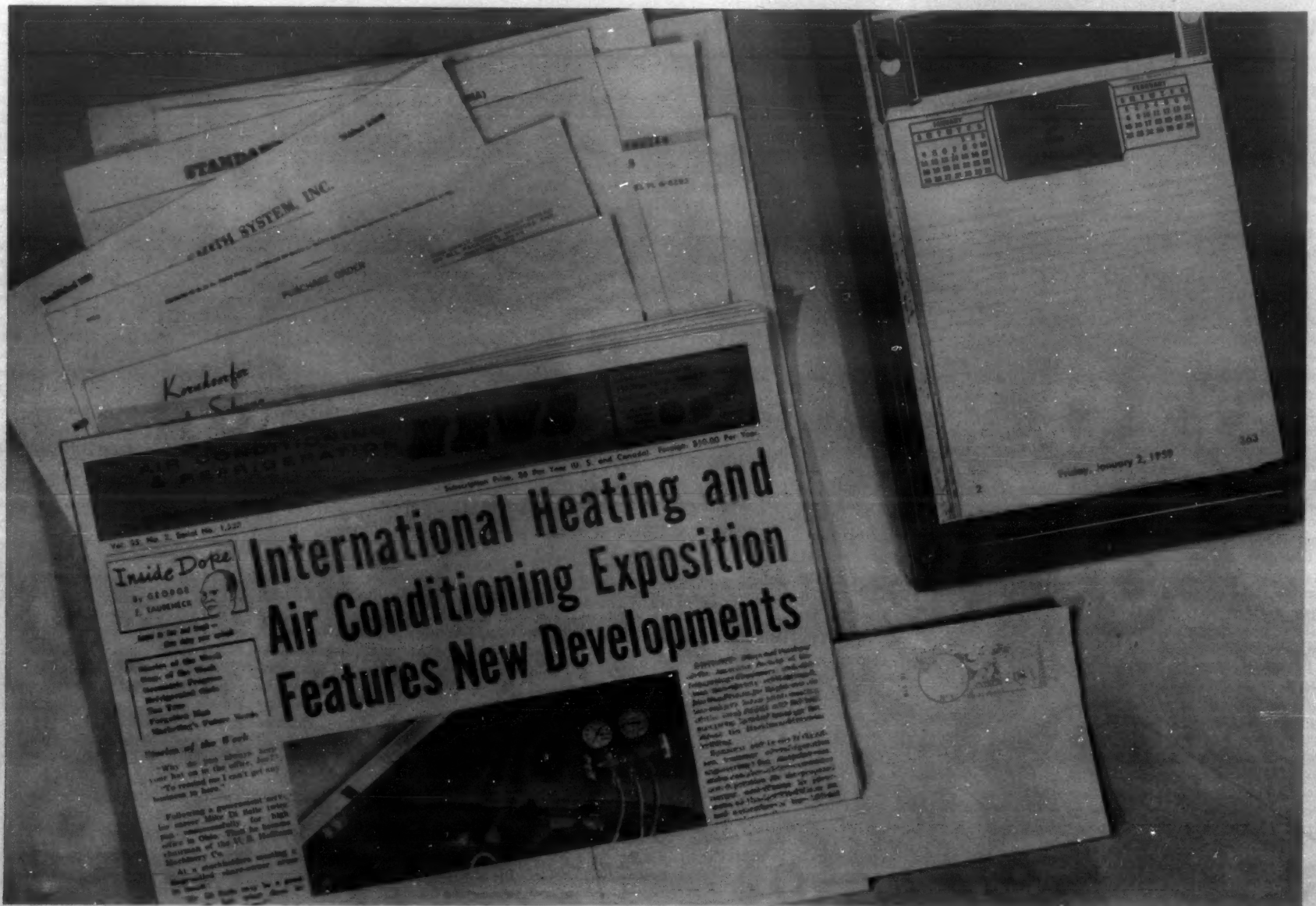
T-FITTING TYPE in 2 to 6 tons, are readily adaptable to systems using conventional "T" driers.

Remco Molecular Sieve Filter-Driers are available at leading wholesalers. Ask your wholesaler for more information, or write for Bulletin MS-1. Remco, Inc., Zelienople, Pa.

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Big special pre-show issue will be the first order of business for your customers in the new year

When your customers and prospects return to their desks on January 2, paramount in their thinking will be the big 14th International Heating & Air Conditioning Exposition to be held in Philadelphia, Jan. 26-29, 1959.

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Servicing Automobile Air Conditioners

(Vol. 3)

BY C. DALE MERICLE

This is the third in the new series of articles on automobile air conditioners which has been prepared to enable the experienced refrigeration serviceman to cash in on this rapidly growing market.

CHEVROLET (3)

Chevrolet Motor Div.
General Motors Corp.
Detroit 2, Mich.

SERVICE HINTS

Evacuating System

Use of a vacuum pump and the double evacuation method is preferred by Chevrolet to remove air and moisture from the system following initial installation or service work.

The compressor itself can be used for evacuation, however.

On Deluxe systems equipped with the superheat safety switch, both hand shut-off valves should be back-seated and then the low pressure shut-off valve opened 1/4 turn.

On Cool-Pack systems equipped with superheat safety switch, disconnect electrical lead to safety switch.

Charging System

Both 1958 Chevrolet systems are charged with Refrigerant-12 in the vapor state through the low side.

Charge is 4 lbs. in Deluxe systems; 2 lbs. 13 oz. (3 lbs. maximum) in Cool-Pack units.

Operating Conditions

Normal operating pressures and temperatures for the 1958 Deluxe and Cool-Pack systems are shown in accompanying tables. These differ from each other and from the 1957 Chevrolet system.

With both 1958 systems the engine is operated at 1,500 r.p.m. with the car in neutral, and an 18-in. fan is operated in front of the condenser. The system is allowed to run approximately 10 minutes. Controls are set for maximum cooling and high speed blower operation; on Deluxe models 100% outside air is used.

On Deluxe systems doors and windows are closed and the hood is up.

On Cool-Pack system doors are open and hood is down.

Note: During periods of extremely high humidity, pres-

ures and temperature may exceed those shown in the tables; extremely low humidity may cause the reverse.

Trouble Shooting

Service complaints common to automobile air conditioners employing the hot gas by-pass method of temperature control will apply to the 1958 Chevrolet systems.

Chevrolet units having the superheat safety switch, however may have to be subjected to additional service checks if the fuse in the clutch electrical lead is blown.

A blown fuse could indicate such things as a seized compressor, shortage of refrigerant, restriction in system, grounded safety switch, or a short in the air conditioning electrical system.

Turning the compressor with a heavy wrench will indicate whether unit has seized or not.

Checking system with gauges without operating system will indicate loss of refrigerant charge.

Checking with a continuity light tester will show if safety switch is shorted.

If none of the above is indicated, replace the fuse and turn on system without starting engine. If fuse blows, the air conditioning electrical system is shorted.

If none of the above apply, operate system and check sight glass for bubbles indicating shortage of refrigerant.

If all the above conditions are satisfactory but fuse still blows, there is a restriction or leak in system.

Adjusting By-Pass Valve

Some service complaints may indicate improper setting of hot gas by-pass valve or control cable connected to this valve.

Control lever may be removed from valve to give access to adjusting screw. Turning adjusting screw clockwise increases pressure at which valve opens; turning screw counter-clockwise decreases opening pressure.

(Next will be a discussion of the Buick auto air conditioner.)

Operating Pressures, Temperatures on 1958 Chevrolet Deluxe System

Ambient Temperature	70°	80°	90°	100°
Relative Humidity (%)	45-50	33-70	30-60	20-50
Compressor Head Pressure	190-230	230-260	273-320	308-350
Compressor Suction Pressure	25-26	25-29	26-35	31-40
Discharge Air Temperature				
At Right-Hand Outlet	45°-50°	48°-54°	51°-63°	58°-69°

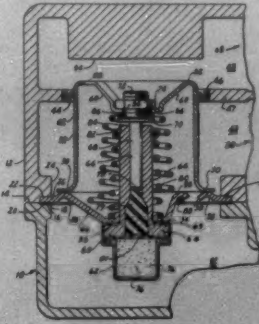
Operating Pressures, Temperatures on 1958 Chevrolet Cool-Pack System

Ambient Temperature	70°	80°	90°	100°
Relative Humidity (%)	30-80	25-60	24-50	18-40
Compressor Head Pressure	165-210	212-242	250-285	300-332
Compressor Suction Pressure	26-28	26-28	26-28	26-28
Discharge Air Temperature				
At Right-Hand Outlet	48°-50°	50°	51°-55°	51°-58°

PATENTS

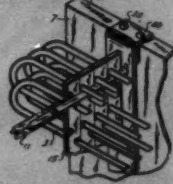
Week of August 12 (Concluded)

2,947,185. THERMOSTAT. John S. Freismuth, St. Clair Shores, Mich., assignor, by mesne assignments, to American Radiator & Standard Sanitary Corp., New York.



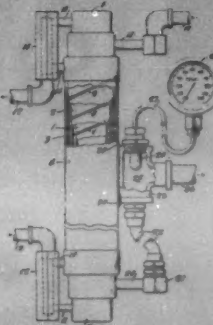
1. In an engine cooling system; wall means forming an inlet passage; a first opening in said wall means; a second wall cooperating with the first wall means to define a first discharge passage; a second opening in said second wall in axial alignment with the first opening; a third wall cooperating with the second wall to define a second discharge passage and an abutment surface in registry with the second opening.

2,947,192. TUBE SUPPORTING AND SPACING STRUCTURE FOR HEAT EXCHANGERS. Lewis Raymond Smith and McLean A. Ambrose, Jackson, Mich., assignors to Acme Industries, Inc., Jackson, Mich.



1. In a heat exchanger, a pair of spaced horizontal supports, divider support means disposed between said horizontal supports and having a plurality of openings therethrough, and a plurality of lengths of tubing disposed in said openings, some of said lengths of tubing resting on said horizontal supports and others of said lengths of tubing being supported by said divider support means, said horizontal supports being spaced apart longitudinally of said lengths of tubing substantially the thickness of said divider support means to give lateral support to both sides of said divider support means.

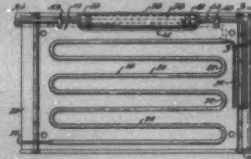
2,947,193. HEAT EXCHANGER. Richard H. Carter, Fostoria, Ohio.



1. In a heat exchanger, four concentric tubes including a first innermost tube, a second tube encircling the first, a third tube encircling the second and an outside tube encircling the third, the first and second tubes being of equal length and longer than the third tube and exteriorly extending a short distance beyond both ends of the third tube, the third tube being longer than the outside tube and exteriorly extending a short distance beyond both ends of the outside tube, the diameters of the tubes being gauged to provide a narrow annular chamber between each adjacent pair.

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

2,947,194. REFRIGERATION EVAPORATOR CONSTRUCTION. William A. Collins and Edward D. Floren, Dowagiac, Mich., assignors to Rudy Mig. Co., Dowagiac, Mich.



A heat exchanger comprising a pair of spaced flat plates, a pair of conduits of serpentine form, one of said conduits bonded to each of said plates, a pair of spaced panels which may vary in length to vary the height of the exchanger joined to said plates to form a compartment, said panels being joined to the edges of said plates by turned flanges which may vary in length to determine the position of

the side panels outwardly of the edges of the plates, and a separate attachable cross-over conduit member interconnecting said conduits, said cross-over conduit member being attachable to said conduits.

DESIGNS

162,369. THERMOSTAT. William A. Ray, North Hollywood, and Mario D. Rosello, Glendale, Calif., assignors to General Controls Co., Glendale, Calif.



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GRADUATE ENGINEER—15 years experience in design and testing of refrigerated products—milk coolers, water coolers, food freezers, x-ray film developing cabinets, etc. Design with emphasis on economics of manufacture without sacrifice of essential quality of product. Particularly experienced in application of cap tube systems. BOX A6113, Air Conditioning & Refrigeration News.

POSITION WITH industrial user of large air conditioning and refrigeration systems, or manufacturer of large refrigeration equipment, by experienced refrigeration man. Experience on large air conditioning systems and industrial process refrigeration, using F13, ammonia cascade and two stage systems. Years' experience—12; age 36; schooling under G.I. Bill. BOX A6123, Air Conditioning & Refrigeration News.

EXPERT IN service and maintenance of ultra-low temperature, altitude and humidity chambers. Have extensive experience with various makes of equipment. Interested either in contracting or permanent position. Will travel. BOX A6123, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

CORRESPONDENT—EXPERIENCED in answering customer letters on dictaphone and have thorough knowledge of refrigeration terms, technical knowledge, and general policy procedures. Good working conditions, hospitalization and other benefits. Salary commensurate with ability and experience. All replies will be acknowledged and held in strictest confidence. Give reference, employment resume, salary expected and if possible enclose picture in first letter to Charles E. Nichols, Service Manager, AMANA REFRIGERATION, INC., Amana, Iowa.

FIELD SERVICE representative wanted for New York City and New England territory. Room air conditioner, freezer and refrigerator experience, willingness to travel, and ability to assist distributors with service training programs are requisites. Possibility of openings in other areas soon. Send full particulars of background, experience, snapshot of yourself and salary expected to Charles E. Nichols, Service Manager, AMANA REFRIGERATION, INC., Amana, Iowa.

DISTRICT SALES Engineer—Must have experience selling packaged air conditioning, liquid chillers and central type air conditioning. Must travel Alabama and Georgia, dealer contacts. Salary, commission, expenses, car furnished. Give complete information first letter. Write Director of Sales, CURTIS MANUFACTURING COMPANY, Refrigeration Division, St. Louis 20, Missouri.

WORK IN St. Petersburg, Florida—Need experienced heating and air conditioning mechanic under 50 who is also thoroughly familiar with Ajax A5A-4 ice cube maker. Give complete record from hi-school to present employment and wages expected. Reply to M. I. SCHMIDT, Apt. 18, 6734 Central Avenue, St. Petersburg, Florida.

AIR CONDITIONING Serviceman—Sunny Florida—Carrier air conditioning and heating contractor seeking above average, thoroughly trained and

experienced serviceman on oil and gas fired furnaces and boilers, central plants and self-contained air conditioners. Must know electric and control wiring. We are exclusive full line Carrier dealers for Central Florida. Permanent year around, 40 hour week guaranteed to qualified mechanic. Also need installation mechanic. Write giving full resume of training, age, dependents, experience and references, also salary expected and availability. WEATHER-MASTERS ENGINEERING COMPANY, 2810 Corrine Drive, Orlando, Florida.

MANUFACTURERS' AGENTS wanted to set up dealers for central air conditioning equipment, and assemblies for ventilating equipment—residential and commercial. Specify desired territory. Call or write—WHIRLWIND MFG. CO.—G. W. Duke—3520 Clinton Drive, Houston, Texas.

REFRIGERATION ENGINEER for Midwest super market operator. This is a permanent 52 weeks a year position. Mostly resident. Very limited travel with expenses paid. We want a man under 40 with excellent knowledge of electricity and refrigeration. Compensation commensurate with qualifications. Please inform us fully giving references we may contact. Our address is P. O. BOX 284, Richmond, Ind.

REFRIGERATION ENGINEER with minimum of five years experience as project engineer on household refrigeration system design, application, and testing. Prefer man between 30 and 50 years of age. All inquiries will be held in confidence. Please send resume showing education, experience, earning and personal data to BOX A6126, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

60-COLD PLATES 6 ft. x 18 inches wide price-all or part \$7.50 each. 2-new 5 horsepower single phase popular brand motors 110-220 volts price-\$150.00 each. 3-new 3 horsepower single phase popular brand motors 110-220 volts price-\$100.00 each. Literature and information will be mailed on request. BOX A6124, Air Conditioning & Refrigeration News.

MODEL HH 2 h.p. automobile air conditioning compressors tapered shaft, vertical mount, complete with flywheel \$33.95. Send for free circulars and catalogs on money saving refrigeration & air conditioning parts and supplies. WALTER W. STARR, 2833 Lincoln Ave., Chicago 12, Illinois.

SODA MASTER drink dispensers and parts manufactured by Carbonic Dispenser, Inc. New and in original crates. Write us for our inventory and prices. WATERS EQUIPMENT COMPANY, INC., P. O. Box 10013, Tampa, Florida. REDwood 7-5377.

BUSINESS OPPORTUNITIES

ESTABLISHED REFRIGERATION & air conditioning in Southern California. All equipment including trucks. Priced for cash. Walk in and go to work. By owner. 433 SOUTH VICTORY BLVD., Burbank, California. Phone Thornwall 6-2945.

REFRIGERATION & store fixtures equipment business for sale in Central Florida. Owner wishes to retire. BOX A6125, Air Conditioning & Refrigeration News.

MISCELLANEOUS

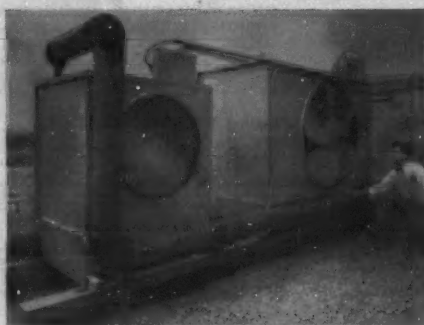
AVAILABLE FOR license, low ambient pressure stabilizing system, based upon patented device, for air cooled or evaporative condensers, eliminates condenser flooding, no complicated piping, simple field application engineering, unlimited capacity increments. Have your patent attorney write BOX A6120, Air Conditioning & Refrigeration News.

On the new *Connecticut Turnpike*...



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